

No. 11952

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United States  
Circuit Court of Appeals  
for the Ninth Circuit

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WAIALUA AGRICULTURAL COMPANY, LIMITED, a corporation,	Appellant,
vs.	
CIRACO MANEJA, et al.,	Appellees.
and	
CIRACO MANEJA, et al.,	Appellants,
vs.	
WAIALUA AGRICULTURAL COMPANY, LIMITED, a corporation,	Appellee.

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Transcript of Record

In Two Volumes

VOLUME I

Pages 1 to 256

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FILED

AUG 18 1948

PAUL P. O'BRIEN

Upon Appeal from the District Court of the United States  
for the Territory of Hawaii



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LIMITED, a corporation,  
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[Clerk's Note: When deemed likely to be of an important nature, errors or doubtful matters appearing in the original certified record are printed literally in italic; and, likewise, cancelled matter appearing in the original certified record is printed and cancelled herein accordingly. When possible, an omission from the text is indicated by printing in italic the two words between which the omission seems to occur.]

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\*Page numbering appearing at foot of page of original certified Transcript of Record.

In the District Court of the United States  
for the Territory of Hawaii

Civil No. 787

WAIALUA AGRICULTURAL COMPANY,  
LIMITED,

Plaintiff,

vs.

Ciraco Maneja, Takeo Miyazaki, Cerilo Lendio, Antone Vierra, Augustine Lorenzo, Haru Kibota, Tadao Watanabe, Koichi Okouchi, Domingo Menor, Tsuruo Hayashi, Cornelio Asuncion, Roque Crisostomo, Peter Holmberg, Hatsusuke Sera, Takumi Okouchi, Pedro Dumlao, Bernabe Hernandez, Domingo Guigui, Ushinosuke Kondo, Teruichi Kubo, Masaiki Oato, Simon Cumlat, Apolonio Lazo, Giichi Hamamoto, Dionicio Carrit, Seraphine Robello, Toshio Tanaka, Barney Faria, Fumio Sunahara, Hirosaku Takata, Kiichi Yamada, Alfred Reyher, Masaru Ezawa, Damaso Claunan, Antone Robello, Manuel Damas, Keichi Kamiyama, Yoshiji Yamada, Edwin Mori, Genjiro Hironaka, Jiro Sakai, Margaret Fujiwara, Louis Pacheco, Yukishige Tsutsui, Yack Chun Lee, Eiko Sakaguchi, Moses Fernandez, and Toshio Kashiwabara, individually and as representative of all other employees of plaintiff who are similarly situated; Local 145-7 of the International Longshoremen's and Warehousemen's Union, and Jack Hall, Regional Director, Territory of Hawaii, of the International Longshoremen's and Warehouse-

men's Union, individually and as representative of all employees of the plaintiff who are named herein as defendants and of all other employees of the plaintiff who are similarly situated,

Defendants.

## COMPLAINT

### I.

#### Allegations of Jurisdiction

This action arises under the Fair Labor Standards Act of 1938 (the Act of June 25, 1938, 52 Stat. 1060, 29 U.S.C. Sections 201 et seq.) hereinafter sometimes called the "Act," which is a law regulating commerce, and is [5] brought to secure a declaratory judgment. This court has jurisdiction pursuant to Section 24 of the Judicial Code as amended, 28 U.S.C. Section 41(8) and pursuant to Section 274d of the Judicial Code, 28 U.S.C. Section 400.

### II.

#### Parties and Nature of Action

2. Plaintiff is a corporation duly organized and existing under and by virtue of the laws of the Territory of Hawaii, with its head office located in Honolulu, City and County of Honolulu, Territory of Hawaii, and with its plantation, where it produces sugar cane, processes it into raw sugar and conducts related operations, located in the District of Waialua, City and County of Honolulu, Territory of Hawaii.

3. Defendants are (a) employees of plaintiff engaged in performing work on or about the plaintiff's plantation, (b) the local union, an unincor-



porated association, which is the collective bargaining representative of such employees and of all other employees of the plaintiff engaged in performing similar work, and (c) the regional director of the International Union, an unincorporated association, with which such local union is affiliated.

4. Each of the employee defendants herein is made a party in his individual capacity and also as representative of all of the plaintiff's employees who are engaged in performing work similar to the work of said employee defendants, and the defendant local union and defendant regional director are made parties in their individual capacities and also as representatives of all the said employee defendants and of all other employees of the [6] plaintiff who are engaged in performing work similar to the work of said employee defendants, as all of said employees of plaintiff constitute a class so numerous as to make it impracticable to bring them all before the court, and the parties named as defendants herein represent all of said employees so as fairly to insure the adequate representation of all of said employees, and the character of the rights sought to be enforced by the plaintiff against all of said employees is several, there are common questions of law and fact affecting the several rights and a common relief is sought.

### III.

#### Statement of Controversy

5. The controversy between the parties hereto relates to the judicial construction of Sections 3(b),



3(f), 3(j), 6, 7(a), 7(c), and 13(a)(6) of the Act.

6. Plaintiff contends:

(a) That all of the employee defendants, as well as all other employees of plaintiff similarly situated, are employees “employed in agriculture” as the term “agriculture” is defined in Section 3(f) of the Act and that, therefore, such employees are exempt from the overtime provisions of the Act i.e. Section 7(a), as provided by Section 13(a)(6) of the Act;

(b) That if any of said employees is not so exempt by virtue of said Section 13(a)(6), he is an employee in a place of employment where his employer i.e. the plaintiff, is engaged in the “processing of . . . sugarcane . . . into sugar (but not refined sugar) or into syrup . . .” and that, therefore, as provided by Section 7(c) [7] of the Act, such employee is exempt from the overtime provisions of the Act i.e. Section 7(a); and

(c) That the employee defendants, when they are engaged in work in connection with the repair and maintenance of the plantation houses and related facilities hereinafter described, and all other employees of plaintiff when they are engaged in performing similar work are not “engaged in commerce or in the production of goods for commerce” as the terms “commerce” and “produced” are defined in Sections 3(b) and 3(j) of the Act and that, therefore, none of the provisions of the Act applies to said employees, whether or not said employees are exempt from the overtime provisions of the Act by virtue of Section 13(a)(6) or of Section 7(c).

7. Defendants contend and have done so repeatedly to the plaintiff;

(a) That none of the employee defendants and no other employees of the plaintiff who are similarly situated are exempt from the overtime provisions of the Act by virtue of Section 13(a)(6) or Section 7(c) or otherwise; and

(b) That all of the employee defendants and all other employees of the plaintiff who are similarly situated are "engaged in commerce or in the production of goods for commerce" within the meaning of Sections 6 and 7(a) of the Act.

(8) Some of the employee defendants and other employees of plaintiff instituted a suit in this Court against the plaintiff on November 14, 1945, under Section 16(b) of the [8] Act to recover unpaid compensation allegedly due them, which suit, by stipulation of the parties, resulted in judgment for the plaintiffs therein entered January 25, 1946. Said stipulation provided that defendant therein (plaintiff here) did not admit the correctness of the interpretations of the Act and the contentions asserted by plaintiffs therein. Said judgment specifically recited that "In any litigation which may hereafter occur between the plaintiffs or any of them and said defendant, including the respective privies of the plaintiffs or any of them or of said defendants, with respect to liability under the Fair Labor Standards Act for any period subsequent to the 25th day of January, 1946, neither . . . this judgment shall operate as *res judicata* or as an estoppel or otherwise as determinative or evidentiary with respect to the

application of the Fair Labor Standards Act or of any of its provisions to the plaintiffs or to any of them or to the defendant or to any of said privies or with respect to any issue of fact or issue of law which is or which has been or which might have been raised in the above entitled cause." On or about the date said judgment was entered, defendant Local 145-7 of the International Longshoremen's and Warehousemen's Union and the International Longshoremen's and Warehousemen's Union made an agreement with the plaintiff that they would cooperate with the plaintiff in the institution and prosecution of test suits to determine whether or not employees to be selected by the plaintiff are covered, and if so, to what extent, by the provisions of the Fair Labor Standards Act. [9]

#### IV.

### NECESSITY FOR RELIEF OF DECLARATORY JUDGMENT

9. The controversy of the parties relates solely to whether plaintiff is required to pay the employee defendants and all other employees similarly situated overtime compensation in accordance with Section 7(a) of the Act. Without a determination of the controversy herein it is impossible for the plaintiff to know and ascertain whether it is violating the Act in not paying overtime compensation to said employees in accordance with Section 7(a) thereof. In the contentions of the defendants are correct the plaintiff will be subject to (a) overtime and liquidated damages, attorneys' fees and costs, as provided in Section 16(b) of the Act; (b) a mul-

tiplicity of suits under said Section 16(b) with consequent vexation, cost and expense of defending said suits (c) suits brought under Section 16(b) of the Act in different jurisdictions—in the United States District Court or Territorial Courts—and the delays incident to final determination and the chances of different adjudications by different jurisdictions; (d) delay in settlement of the controversy if the final determination of the legal question is left to adjudication in suits brought under Section 16(b); (e) strikes and labor disturbances if it fails to comply with the contentions of the defendants; (f) great expense in paying overtime compensation in accordance with the provisions of Section 7(a) of the Act to the employee defendants and other employees of plaintiff engaged in work similar to that of the employee defendants and in planning and instituting new methods of operation resulting in great loss and damage to it in order to meet the expense of paying such overtime, if, by reason of the defendants' contentions and the perils of not [10] complying with same, plaintiff feels compelled to endeavor to comply; and (g) a danger that the marketing of raw sugar and molasses produced by it may be hampered or prevented under the provisions of Sections 15(a)(1) and 17 of the Act. Said Section 15(a)(1) renders it unlawful to ship in interstate commerce or to ship, with knowledge that shipment in interstate commerce is intended, any goods in the production of which any employee was employed in violation of the wage

and overtime provisions of the Act. Said Section 17 confers upon the District Courts of the United States jurisdiction to restrain violations of Section 15 of the Act.

## V.

### Plaintiff's Operations

10. Since the original incorporation of the plaintiff in 1898, its business has been and continues to be the growing, cultivating and harvesting of sugar cane on lands owned or leased by it; the processing of such sugar cane into raw sugar and molasses; the bagging, loading and shipping of the raw sugar to refineries situated in the continental United States; and the loading and shipping of molasses in bulk to continental United States. The loading of the bagged raw sugar and of the molasses into railroad box and tank cars of the Oahu Railway & Land Company, an independently owned and operated carrier (hereinafter referred to as the "O. R. & L."), at the site of the mill and the pushing of such cars from such site onto a nearby spur of the O. R. & L. complete the operations of the plaintiff and the work of its employees relative thereto. The plaintiff does not engage in any sugar refining operations. As used in this complaint the term "mill" means the building [11] and equipment of the plaintiff used in the actual processing of sugar cane into raw sugar, including cane carrier, cane cleaning plant and scales, crushing plant, boiling house, fire room, power plant, sugar warehouse, and molasses tank, and all equipment therein.



11. Plaintiff operates one of thirty-four (34) sugar plantations located, operating and doing business in the Territory of Hawaii (hereinafter referred to as the "Territory"). The total raw sugar produced by these thirty-four plantations in 1945 was 821,216 tons. Of this amount the plaintiff produced 56,193 tons or slightly less than 7 per cent, and as such it ranked as the third largest producer of raw sugar in the Territory in 1945. The total number of employees of the thirty-four plantations as of September 1, 1946, was 29,517 and was approximately 28 per cent of the total number of persons privately employed in the Territory. The raising of sugar cane and the processing of it into raw sugar constitutes the principal industry in the Territory in terms of the number of persons privately employed, invested capital and the value of the product produced. Between the years 1941 and 1945, the Territory produced between 13.30 per cent and 10.76 per cent of all sugar, both beet and cane, distributed for consumption in the continental United States.

12. Sugar cane is highly perishable and starts to deteriorate immediately after harvesting. To avoid serious losses it must be processed into sugar, syrup or molasses within a few hours after the leaves have been burned or the cane severed from the ground. For this reason and because of the great weight and bulkiness of cane as compared with raw sugar, it must be processed within a few miles of where [12] it is grown. Sugar cane never

moves into interstate commerce in its natural state. Except for small amounts which are used as seed cane, it is grown exclusively for the purpose of producing sugar, syrup or molasses and it is these end products, which are the result of the processing of cane, which become articles of interstate commerce.

13. At the present time plaintiff grows and produces sugar cane on 9,663 acres of land owned or leased by it. Substantially all of the land now devoted to sugar cane production has been owned or leased and used by it for this purpose since 1910. The table set forth in paragraph 33 hereof shows that the number of acres under cane cultivation since 1910 fluctuated above and below the present cane acreage by approximately 10 per cent. The cane growing land of the plaintiff, its buildings and yard area, and other lands owned or leased by the plaintiff, but unsuited for cane growing, including a wooded area from which fire wood is cut for use as fuel by the plaintiff's employees living in the plantation villages hereinafter described, form a contiguous and compact area as shown by Exhibit "A" which is attached hereto and made a part hereof, except that an area of 470.42 acres of cane growing land located on the lowlands at the west end of the plantation is connected with the principal area of the plantation only by a strip of land 40 feet wide and 1,150 feet long, over which the plaintiff has a perpetual easement for rights-of-way for the moving of its field equipment, supplies and sugar cane.

Sugar cane is grown in fields which in one area of the plantation are cut by deep gulches and waste land unsuited for cane production, while in other areas the fields are separated only by plantation roads or public highways. Cane growing land is criss-crossed with [13] a network of plantation field roads and a narrow gauge railroad owned by the plaintiff. Supplies, materials and equipment used for planting, cultivating and harvesting are transported over these field roads. The railroad is used to transport cane from the fields to the mill and to transport some field supplies and harvesting equipment between the plantation buildings and yard area and the fields. There is also a network of irrigation ditches throughout the plantation and a number of water storage reservoirs, since all cane grown on the plantation must be irrigated. All the lands devoted to the growing of sugar cane are managed and operated by the plaintiff as an integrated farming unit and single enterprise with identical cropping, cultivation and harvesting practices, and with the same labor and equipment. Employees work in the fields moving from one area to another depending upon the program of plowing, planting, irrigating, fertilizing, applying herbicides and insecticides, weeding and harvesting. The cane lands are in various stages of production or preparation. Some acreage is being plowed and furrowed for new planting, some is being "ratooned" (a process hereinafter described); some acreage is in young growth, some in old growth nearing maturity



and other acreage is being harvested. The growing harvesting and processing of the cane and the marketing of the raw sugar constitute one continuous and year around operation except that annually harvesting and processing of cane are suspended for approximately three (3) months for the purpose of reconditioning the mill and equipment, as hereinafter described.

14. As of September 1, 1946, the plaintiff had a total of 1,144 employees. The plaintiff considers this number of employees sufficient for its operations as conducted at the present time. Its labor requirements are substantially the [14] same throughout the year. The plaintiff has ten (10) job classifications for its rank and file or non-supervisory employees, who numbered 959 as of November 19, 1946. The hourly wage rates for such ten (10) classifications range from a minimum of 80c to a maximum of \$1.38. The plaintiff, however, employs 12 handicapped, superannuated and part-time workers who receive a minimum hourly wage of 74c. The weighted average hourly wage rate for all non-supervisory employees of the plaintiff is 90.8c. The existing collective bargaining agreement dated November 19, 1946, between the plaintiff and the defendant International Longshoremen's and Warehousemen's Union, Local 145-7, as collective bargaining agent for most of the non-supervisory employees, which contract sets forth the wages, hours and working conditions of the employees herein involved, is attached hereto as Exhibit "B" and made a part hereof.

15. All plantation operations and activities are under the over-all direction and control of the plantation manager. Under him as immediate assistants are the assistant manager and three staff assistants, the field and mill coordinator, and the personnel training and development director. The various plantation operations are each under the supervision of a manager or superintendent as follows: Field operations, the field superintendent; mill and allied shop operations, the cane processing superintendent; warehouse, the warehouse superintendent; construction, the construction superintendent; accounting, the office manager; and civil engineering, the civil engineer. All of these superintendents are responsible to the plantation manager.

16. The plantation buildings, including the mill which processes the cane into raw sugar, a number of buildings [15] housing repair shops for the maintenance of field, transportation and mill equipment, warehouses for plantation supplies, and other buildings having functional relation to the entire plantation operations, are centrally located on the lowlands of the plantation in a small compact and contiguous area. The administration offices of the plaintiff are located on the plantation within a distance of not more than one-fourth ( $\frac{1}{4}$ ) of a mile from the other buildings.

17. On its plantation plaintiff prepares and plows the fields for the planting of sugar cane; plants sugar cane; ratoons the fields ("ratooning" is a term referring to the operations performed after a field is harvested to prepare the field for

the growing of another crop. In such preparation the old cane stools or stubble are left in place and the ground is refurrowed into rows. The undamaged cane stools or stubble will then send up new shoots upon application of water and fertilizer to the field. New seed is added to fill in blank spots or to replace damaged stools or stubble); cultivates sugar cane; applies fertilizer to cane fields; irrigates cane fields (a map showing the irrigation system on the plantation is attached hereto as Exhibit "C" and made a part hereof); harvests sugar cane; maintains a network of field roads for the transportation of labor, field supplies, and equipment throughout the plantation; and transports sugar cane by a narrow-gauge railroad from the fields where grown to the mill (a map, showing the transportation system of the plaintiff, the railroad, and the field roads and public roads, is attached hereto as Exhibit "D" and made a part hereof). At the mill the plaintiff cleans the sugar cane; crushes it in order to extract the juices therefrom; produces raw sugar and molasses from such juices; and loads bagged raw sugar and [16] molasses in railroad cars for shipment to the continental United States, or stores such products temporarily in the sugar warehouse or molasses tanks.

18. From the time the plaintiff was organized, and continuing to the present, the plaintiff has owned and operated the narrow gauge railroad system referred to in paragraph 17 hereof. This railroad system is constructed, located and operated

exclusively on the plantation. It hauls no cane or freight for anyone other than the plaintiff. It is used predominately by the plaintiff for the purpose of hauling sugar cane from the fields of the plantation to the mill. It is also used to a much lesser extent to haul portable rails and other field supplies and equipment from the plantation warehouses and shop yards to and from the fields.

19. Under normal operating conditions the bagged sugar after leaving the mill is loaded directly into railroad box cars for shipment. Due to the limited number of cars and storage space at the port wharves and occasional interruptions in ship schedules, the sugar may be stored temporarily from time to time in the plantation sugar warehouse. Raw sugar is never stored at the plantation because of price, market, or other economic considerations. The most efficient and profitable operations call for shipment to mainland refineries immediately upon production. In addition to sugar, all of the empty sugar bags, in bales of one thousand to six hundred bags each, are stored in the warehouse. Due to a shortage of warehouse space, fertilizer is also stored in bags in this building from time to time.

20. Production in the mill operations of plaintiff is keyed basically to a six-day week with continuous and around-the-clock operations, the mill stopping the crushing [17] of cane at 2:00 p.m. on Saturdays and starting up at 2:00 p.m. on Sundays. The 24-hour day is divided into three 8-hour shifts

running from 6:00 a.m. to 2:00 p.m., 2:00 p.m. to 10:00 p.m., and 10:00 p.m. to 6:00 a.m.

21. The weekly 24-hour shutdown period of the mill is necessary to perform cleaning and repair operations. While, in general, repairs are performed during the week-end, every effort is made to anticipate week-end requirements and the various shops located near the mill perform as much work as possible while the mill is in operation.

22. All of the cane processed by the plaintiff's mill on the plantation is produced on the plaintiff's plantation and by the plaintiff.

23. The extraction of the juices from the sugar cane fibre and the processing of such juices into raw sugar require large amounts of power. It is therefore traditional in sugar cane processing to utilize bagasse (the cane fibre remaining after the juices are extracted from the cane stalks) as an economical source of fuel for the production of power for use in performing the various processing operations. An average of approximately three thousand tons of bagasse is produced each week by plaintiff when its mill is operating at full capacity. When dried one ton of bagasse has a fuel value approximately equivalent to two barrels of fuel oil. Fuel is also essential in the processing operations for the production of steam for heating and evaporating of the juices and the crystalization of the sugar. Fuel is also used to produce steam for the generation of electric power needed in the various operations of the plantation, as will be hereinafter



more fully described. If the bagasse were disposed of as waste, other fuel would have [18] to be obtained in order to obtain steam. If the bagasse were not utilized as fuel, a difficult disposal problem would be presented because of its bulkiness and the large volume involved. Bagasse produced by the plaintiff has no marketable value. The room in which the bagasse is burned and the steam is produced is known as the fire room and is located in the mill adjacent to the crusher room. Plaintiff attempts to save and store enough bagasse during the week to meet the requirements for operating the boiler furnaces on week-ends when cane is not being crushed. Sufficient quantities of bagasse are not always available to satisfy the fuel requirements of the mill. This condition occurs during periods of breakdown of machinery and during periods of wet weather when harvesting and processing operations are slowed down by reason of heavy trash contents. The boiler furnaces are therefore equipped to burn fuel oil which is stored in a concrete fuel oil tank located in the mill yard near the fire room for convenience of supply.

24. The electric power generating equipment of the plaintiff is located in the mill. It consists of one 6600 volt generator driven by a steam turbine and two 440 volt generators driven by reciprocating steam engines. The electric power generated by this machinery is generated from steam produced in the boilers in the fire room, which passes through the generating machinery and is then conveyed

through steam lines for use in the processing operations in the boiling room. Electric power generated is not sufficient to supply the needs of the plaintiff. For the purpose of supplementing the power generated, electric power is purchased from the Hawaiian Electric Company, Limited, an independently owned and operated public utility on the Island of Oahu. During the period [19] 1941-1945 inclusive, power generated in the plaintiff's system represented  $64\frac{6}{10}$  per cent of the amount consumed. The remaining  $35\frac{4}{10}$  per cent was purchased from the Hawaiian Electric Company. The power generated and purchased by the plaintiff is distributed to the mill, field irrigation pumps, repair shops and related buildings, domestic water pumps, plantation houses and services and to several small non-plantation users living in the plantation community who, because of their location, cannot be conveniently served from the present transmission lines of the Hawaiian Electric Company. The electric transmission lines representing the distribution system of both the plaintiff and the Hawaiian Electric are shown on the map attached hereto as Exhibit "E." The total amount of power used by all non-plantation users is approximately one-half of one per cent of the total power distributed by the plaintiff and is becoming less because these users are constantly being absorbed by the Hawaiian Electric as it extends its transmission lines. None of the electric power distributed to non-plantation users by the plaintiff is

used for or in connection with the production of goods for interstate commerce, nor is it used to operate any instrumentality of interstate commerce nor is it transmitted into interstate commerce. During the off season the turbines, steam engines, generators, motors and auxiliary equipment in the mill are overhauled and reconditioned and during such period the plaintiff generates no electric power but purchases all of the power which it needs from the Hawaiian Electric Company.

25. Both field and mill operations necessitate the equipping and maintaining of complete service shops for prompt minor repairs and emergency work and major overhaul. Machinery breakdowns in the mill may result in a shutdown of the entire mill which, in turn, necessitates a discontinuance of harvesting and transportation operations until mill repairs are completed. Breakdown of harvesting machinery or of cane transportation facilities in turn may result in a shutdown of the entire mill. Repair shops are located in an area extending not more than 300 feet from the mill building. The location of the various service shops is shown on Exhibit "F" which is attached hereto and made a part hereof. A list of the shops and a brief description of the work which is performed by their personnel is as follows:

(a) Machine Shop. Practically all the machining work of the plaintiff, except heavy work required by the mill, railroad and shops, is done in the machine shop. A substantial part of all machine shop



work is for the mill; the remainder is in connection with the other activities of the plantation. During the off season, mill work done by the machine shop accounts for 85 to 90 per cent of the total man-hours' work performed therein. Work in this shop is fairly uniform throughout the year with peaks in case of emergency mill repairs and during the mill off season. A large portion of the work done by the machine shop personnel is performed within the shop, utilizing shop tools. Shop personnel are, however, from time to time called into the mill, on instructions from the cane processing superintendent, for repairs, regrooving of mill rolls and such other work as cannot be expeditiously handled by mill workers.

(b) Welding Shop. A substantial part of welding shop work is for the mill; the remainder is in connection with the other activities of the plantation. During the off season, welding shop work for the mill represents approximately 90 per cent or more of the total man-hours. Most of the welding [21] repairs to mill equipment are made in the shop, although personnel are dispatched to the point of breakdown on instructions received from the cane processing superintendent. Steel cane car repairs are made alongside the shop building by the shop personnel. The welding shop employees also operate pipe rolls located in the pipe rolling shed. In this work the welding shop employees are assisted by employees from the blacksmith or cane loading machine repair shop.

(c) Blacksmith Shop. The blacksmith shop is

located adjacent to the mill building. A substantial part of the work of the blacksmith shop is for the mill and consists principally of constructing and reconditioning of cane carrier leveling and preparation knives. However, cane car repair work, such as straightening of bars and channels, repair of tractors and caneloaders and field implement work occupy the great percentage of the man-hours in the shop. Work of this shop is therefore uniform throughout the year.

(d) Tinsmith Shop. Main work of the shop is the making and reconditioning of tin irrigation scoops. These scoops are used in quantity in the field for the purpose of deflecting water from concrete irrigation flumes to field irrigation lines.

(e) Cane Loading Machine Repair Shop. This shop performs all major repairs and overhaul of caneloaders, grabs and miscellaneous field equipment. Men from this shop are occasionally called upon to assist in the emergency mill repairs. They also go into the field to make repairs on cane loading machines during the course of harvesting operations. One function of this shop is the construction of auxiliary field equipment, such as subsoilers used in plowing, cane line reshapers used to maintain irrigation water lines in the field, and portable track line leveler attachments used in [22] leveling the lines for laying portable tracks. Repairs on such auxiliary field equipment are also made in this shop with the assistance of tractor repair shop personnel. During the off season following the completion of harvesting, most of the cane loading ma-

chine operators are brought into the shop to supplement the regular crew and assist in overhaul. Most of the caneloaders and cane grabs are overhauled and reconditioned during the off season and all other cane grabs are repaired at that time.

(f) Tractor Repair Shop. Employees in this shop are supplemented during the off season by tractor operators brought into the shop from the field to assist in repairs. All tractors used in the harvesting field are overhauled in this shop during the off season. Tractors used for towing cane line reshapers are also overhauled during the off season. Other tractors which cannot be overhauled during the off season are scheduled for overhaul during the operating season. Tractor engines are overhauled at regular periods. Shop men may be dispatched for repairs of tractors in the fields. As indicated above under (e) personnel from this shop also assist in the repair of field implements in the cane loading machine repair shop.

(g) Garage. The primary work of the garage is the maintenance, repair and servicing of the plaintiff's motor vehicles. These vehicles assigned to the various operations of the plantation. Overhaul of cars and trucks is scheduled throughout the year with the exception of pickup trucks used by the harvesting men which are overhauled during the off season. Complete servicing equipment with necessary personnel is also maintained. Field service covers the daily lubrication of all equipment and replenishing of fuel tanks.[23] Completely equipped

service trucks service all field equipment except that in the harvesting fields.

(h) Electric Shop. This shop is responsible for the repair and maintenance of electric pumps and transmission lines, domestic wiring repairs, including wiring of houses, and the building of new electrical appliances. A small amount of work is done on electrical machines located in the other shops. Approximately 50 per cent of the work in this shop is for the mill. During the off season, approximately 70 per cent of all work is for the mill. Some of the employees in this shop are mill electricians who work two weeks in the mill and one week in the shop.

(i) Carpenter Shop. The carpenters perform all carpenter work on the plantation, which includes the construction of mill scaffoldings, construction and maintenance of railroad trestles and wooden gates for flumes, and the construction and maintenance of cane cars. In addition they perform necessary maintenance work on plantation buildings and houses. The carpenters also install and maintain steel and concrete pipelines and siphons. Miscellaneous construction, such as construction of tool lockers, scrapers and strainers, is performed in this shop. During the off season, the work of the employees in this shop is similar to that in the operating season. Additional men are brought in from the fields to assist in cane car overhauling and general carpentry work during the off season.

(j) Paint Shop. This shop performs all painting work on the plantation buildings including houses,

and also occasionally the painters paint siphons and railroad trestles. As a general rule, the employees in this shop do not paint for the mill, this work being done by mill employees. Almost [24] the entire time of the paint shop crew is devoted to painting of plantation buildings and houses throughout the year. During the off season, additional employees are brought in from the fields to assist in the work of this shop.

(k) Plumbing Shop. The employees of this shop perform all plumbing work on the plantation, including the construction and maintenance of sewer and water systems and the plumbing for buildings and houses. Assignments vary little throughout the year. During the off season, a few field employees are assigned to the plumbing shop as helpers.

(l) Roundhouse. The employees in this shop service, clean, and fire the plaintiff's locomotives. Additional employees are occasionally assigned to this shop for minor locomotive repairs.

26. Various chemical tests are made by the laboratory personnel in the course of all field and mill operations. By various kinds of careful analyses performed relative to the cane and materials in the course of growing, cultivating and harvesting and extraction of the sugar juices, all operations are controlled pursuant to scientific methods.

27. The plaintiff operates its own concrete products plant which is located on plantation lands adjacent to the plantation buildings and yard area. This plant is engaged primarily in producing concrete irrigation flumes and water supply pipe. It



also makes some blocks, footings, sidewalk slabs and other various incidental concrete products required by the plantation. These operations do not have any off season. During the off season, however, additional personnel may be brought in from the fields.

28. Materials and supplies purchased for plaintiff's operations are warehoused or stored in several buildings [25] located in the plantation buildings and yard area. The total value of goods procured during a year including stock and special order materials averages slightly over \$1,000,000. The principal buildings in which the supplies and materials of the plaintiff are stored are the general supplies warehouse and the heavy supplies warehouse. They house electrical goods, building hardware, paints, window screening, tractor and cane loading repair parts, copper tubing, pipe stock, metal shapes stock, galvanized sheeting, steel sheets and many other items. Other storage facilities for plaintiff's supplies are an oil storage warehouse, fuel tanks, space in the garage, cement warehouse, lime room in the mill, and lumber yard adjoining the general supplies warehouse.

29. The location of the main administration office is shown on Exhibit "A" and is about fifteen hundred feet from the plantation buildings and yard area. The manager, assistant manager and staff assistants, including the accounting office employees, the civil engineer and staff (the staff works alternately in the office and in the fields), one draftsman, the agriculturist, and industrial relations section, have their offices in this building.

30. The plaintiff has one main stable near the plantation buildings and yard area. Horses are used by the harvesting overseer to ride in the fields. Pack mules are used upon occasion to pack seed, fertilizer, broken concrete flumes and other things in and out of the cane fields. The plaintiff has several feeding stations for horses and mules where they are kept temporarily while work is being performed in a particular area.

31. For efficient operations sugar mills of the Territory must be closed down annually for general repair [26] and reconditioning because of the heavy wear and tear on mill machinery and equipment. That part of the year when the mill is shut down for repairs is termed the "off season." Because of the little variation in climatic and weather conditions from month to month, sugar cane is grown the year around in the Territory and can be harvested and milled any month in the year—and frequently is. The amount of sugar recovered per ton of sugar cane, however, varies somewhat throughout the year and is highest during the months of May, June and July. The variation during the year in the ratio of sugar recovery per ton of cane has some influence on the time selected by a plantation for closing down for annual repairs. The selection of the off season is also influenced by wet weather which may make it more difficult to move harvesting machinery in the fields and to burn the leaves from the cane. Exhibit "G" attached hereto and made a part hereof is a date schedule of the off seasons for all plantations in the Territory from

1940 to 1945 inclusive. While it will be seen from this Exhibit that some plantations harvested and milled cane each of the months of the year sometime during this six-year period and that the duration and particular months of the year embraced in the off season differed considerably between the plantations, the majority of the plantations selected their off season sometime during the months of October, November, December and January. Operational difficulties, labor problems, shortages of equipment and other factors frequently make it impossible for a mill to close down during the season when operations are most disadvantageous. For example, the sugar industry of the Territory was on strike from September 1, 1946 to November 19, 1946. As a result of this strike, most plantations of [27] the Territory milled sugar cane during the month of December of that year. The length of the off season for the sugar industry in the Territory averaged from 2½ to 3 months per year from 1940 to 1945 inclusive as shown by Exhibit "G." But for the plaintiff it averaged approximately three months per year for this period, the dates of which were as follows:

SCHEDULE SHOWING "OFF SEASON"

Year		From	To
1941.....	Aug.	30, 1941	Jan. 26, 1942
1942.....	Oct.	6, 1942	Jan. 22, 1943
1943.....	Oct.	1, 1943	Jan. 17, 1944
1944.....	Sept.	12, 1944	Jan. 9, 1945
1945.....	Oct.	3, 1945	Jan. 15, 1946

During the off season for the plaintiff, there are no harvesting, ratooning, cane transportation, or cane processing operations. All field operations



other than harvesting, ratooning and cane transportation continue throughout the year.

32. During the off season extensive repairs are necessary because of severe operating conditions in the mill. Only during a shutdown period can extensive repairs and alterations be made. If these repairs were not done annually, shutdowns would be frequent and excessive losses would be incurred. Most of the off season repair work is done by the men who operate the mill during the crushing season. Off season work is generally commenced on a three-shift basis. It is necessary that parts going to Honolulu for repairs be sent in as soon as possible. Since the crusher room crane is required in taking the mill apart, it is in great demand to start out with and too much time is lost if all of the men work on one or two shifts. In the fire room it is necessary to get ahead with the tube and drum cleaning as fast as possible so the boilers may be [28] inspected. As the off season progresses and the work is spread out, it is practical to go on a two-shift and finally a one-shift basis. The average number of man-days of work performed in the mill during each twenty-four hour period during the off season is 116, irrespective of whether the work is on a three-shift, two-shift, or one-shift basis. This is precisely the same as the average number of man-days of work performed in the mill during each twenty-four hour period during the crushing season, when all work is on a three-shift basis. All mill employees are employed on a forty-eight hour work

week both during the crushing season and the off season.

33. The reduction of man-days required to produce a ton of raw sugar, including all operations from the field to the mill inclusive, is illustrated by the following table, showing the number of employees working for the plaintiff, the total tons of raw sugar produced, the man-days required per ton of raw sugar and the total acres under cultivation, at five year intervals from 1910 to 1945 inclusive:

	Number of Employees	Tons of Raw Sugar Produced	Man Days Per Ton of Raw Sugar	Total Acres Under Cultivation
1910	2,726	30,870	21.2	9,889
1915	2,489	30,697	20.8	10,294
1920	1,824	28,284	19.8	10,622
1925	2,444	29,832	20.7	9,244
1930	2,516	49,981	10.4	9,884
1935	1,619	50,580	8.06	8,573
1940	1,237	57,841	6.9	9,565
1945	951	56,193	4.9	9,415
1946 (9/1)	1,144	-----	----	-----

From the above it can be seen that the number of man-days required to produce a ton of raw sugar in 1910 was 21.2, while in 1945 it was reduced to 4.9 man-days. This reduction in the man-days required to produce a ton of sugar was brought about through mechanization, improved management and the [29] application of scientific methods in irrigating, weeding, plowing, planting, harvesting and the processing of sugar cane into raw sugar. To a great extent hand labor and the use of horse-drawn field equipment and vehicles have been eliminated and motorized equipment substituted in their stead.

34. The total direct operating charges of the plaintiff in operating its plantation for the calendar

year 1945 were \$1,726,278.24. Of this amount \$1,230,393.63 was for cultivating, irrigation water supply, harvesting, transporting of cane and other general field expenses and \$495,884.61 was for operating and repairing the mill and purchasing sugar bags. Thus approximately 71% of the direct operating expenses for the production of a single ton of raw sugar in 1945 was for producing, harvesting and transporting sugar cane to the mill while 29% was for processing. The total number of hours of direct labor attributable to the sugar operations of the plaintiff for the calendar year 1945 was 1,332,679.50. Of this number, 1,024,876.25 hours were for cultivating, irrigation water supply, harvesting, transporting and other work relating to field operations while 307,803.25 hours were for operating and repairing the mill. Attached hereto and made a part hereof is Exhibit "H" showing the total direct operating expenses of the plaintiff for the calendar year 1945, itemized according to the various categories of operation. This Exhibit is a true and accurate copy of a record of the plaintiff which was the basis for a return filed with the Bureau of Internal Revenue by the plaintiff on March 1, 1946, showing direct operating expenses [30] of the plaintiff for the twelve (12) months ended December 31, 1945. Included within the direct operating expenses are all charges for direct labor, materials, electric current, engineering, certain equipment and all other direct service charges as classified and listed on such Exhibit.

35. (a) At the time the plaintiff company was

organized, there was no established community having housing or other services or facilities for living in or near the area which it proposed to devote to the production and processing of sugar cane, to accommodate the employees whom the plaintiff needed for its operations. As a consequence, it became necessary for the plaintiff to construct houses, develop services and otherwise build up and establish facilities for permanent living on the plantation to serve the needs of the required number of employees and their families. The plaintiff did this over a period of years and established a perquisite system under which employees received housing, housing maintenance, water, fire wood and kerosene fuel, electricity, medical care, recreational facilities and various maintenance services, including garbage disposal and street cleaning, as a part of their regular compensation. The principal plantation community was established around the plantation buildings and yard area as shown on Exhibit "A" and came to be known as the village of Waialua. After the plantation was established and continued to operate, there gradually grew up an independent community which is now known as the village of Haleiwa, which is located off the edge of the plantation a little more than a mile from the village of Waialua; and in addition, many independently owned and operated stores, shops, restaurants, service establishments and public schools and churches made their appearance on the [31] plantation itself in and around the village of Waialua to serve the

needs of plaintiff's employees and their families living in the area.

(b) By the collective bargaining agreement dated November 19, 1946 between the plaintiff and the defendant International Longshoremen's & Warehousemen's Union, Local No. 145-7, which is attached hereto as Exhibit "B," acting for most of the non-supervisory employees of the plaintiff, the perquisite system was abolished for all such employees, the value of the perquisites previously allowed to employees being converted into cash wages by the plaintiff and the employee in turn paying cash for all facilities and services being furnished him by the plaintiff. The schedule of rent being paid the plaintiff for the occupancy of houses was worked out by collective bargaining with the union and is a part of the bargaining agreement. No employee covered by the existing collective bargaining agreement, including each and every employee defendant herein, is required as a condition of employment to live on the plantation or in plantation houses or to use any service or facility which the plaintiff may be in a position to render its employees. The relationship which exists between the plaintiff and its employees who live in plantation houses is that of landlord and tenant. Employees of the plaintiff as heretofore are continuing to render services and perform maintenance work on plantation houses and village areas.

(c) At the present time the plaintiff owns 820 houses, all of which are located on the plantation. Most of them surround the plantation buildings and



yard area and together with the business establishments of the community constitute the village of Waialua. Approximately 335 houses [32] however, are scattered over the plantation, some of this latter number being clustered and forming field villages. The houses are of frame construction, each house having a yard in front and yard area in the rear which is used for chickens, vegetable gardens or such other purposes as the employees may desire. The lot area for each house may vary from 3,000 square feet to 4,500 square feet or more. The houses face on roads or streets. On the basis of a census which was completed June 30, 1946, the 820 houses on the plantation were occupied by 3,373 persons, 2,952 of whom were employees and pensioners of the plaintiff, and their families. The remaining 421 persons living on the plantation and in its houses were lessees and their families who were not employed by the plaintiff and who either worked off the plantation or who owned, operated or were employed by, independently controlled businesses within it. As of June 30, 1946, there were also 16 employees working on the plantation who lived off the plantation and in houses not supplied or owned by plaintiff.

(d) Waialua village has all the physical and visual characteristics of an established community and is similar to a typical small village or town of a farming community center. The area is criss-crossed with government roads and also roads constructed and maintained by the plaintiff. This plantation community offers the usual services and



typical commercial establishments to be found in any small town or village. It has ten (10) general stores, two (2) restaurants, two (2) fish markets, one (1) candy store, one (1) hardware store, one (1) clothing store, four (4) barber shops, one (1) beauty shop, one (1) photographic studio, two (2) automotive service stations, two (2) motion picture [33] theatres, one (1) bank, and other service establishments, all of which are independently owned and operated; a retail store with two (2) branches, an automotive service station and a hospital owned and operated by the plaintiff for both its employees and their families and non-plantation persons; and one (1) post office, one (1) public library, five (5) churches, one (1) intermediate and one (1) high school and one (1) day-care center operated as a part of the Territorial School System. There is also existing in this general area of the plantation two (2) gymnasiums, one (1) club house, one (1) swimming pool, two (2) tennis courts, one (1) athletic field and one (1) beach house, all of which were constructed by the plaintiff and are available to an Athletic Association, the membership of which is composed of both plaintiff's employees and other persons in the general community, which operates these facilities through dues collections. The village of Haleiwa is a small business and residential community which is made up of privately owned residences and typical small retail and service establishments. Haleiwa caters to plaintiff's employees and to surround-

ing community residents, who include persons working at other locations on the Island of Oahu and residents of numerous beach houses and Army and Navy personnel using beach recreational facilities. To some extent the village of Haleiwa has become integrated with the village of Waialua with common fire protection equipment and public police patrol officers serving both communities. Attached hereto and made a part hereof is Exhibit "I," a map showing the location of Waialua village, field villages of the plaintiff, Haleiwa village and independently owned houses, stores and commercial establishments situated in and about Waialua village, together with the plantation roads and public [34] roads of the area.

36. In those instances in paragraphs 10 to 35 hereof where certain activities and operations of the plaintiff have been described by facts and figures covering a period of time prior to the commencement of this action, such facts and figures represent a substantially true and accurate description of such activities and operations at the present time unless the context otherwise indicates.

## VI.

### Duties of Employee Defendants

37. Each of the defendants, whose names are hereinafter set forth in paragraphs 38 to 85 hereof, is now, and for a period of at least one year prior hereto has been, an employee of the plaintiff and as such employee has been performing the work and duties set forth and alleged immediately fol-

lowing his or her name and in the manner and at the places and times shown; the work and duties of each such employee defendant have been and are now being performed in connection with and as a part of the plaintiff's operations alleged in paragraphs 10 to 35 hereof; and the work and duties of each such employee defendant are to be considered as further alleged by said paragraphs 10 to 35 to the extent that said paragraphs 10 to 35 are related and applicable to the particular work and duties alleged for such employee defendants in paragraphs 38 to 85 hereof.

38. Ciraco Maneja (Ratooning Tractor Operator)—He operates a 30 H.P. caterpillar tractor with line shaper attachments to prepare ratoon cane field. He makes minor repairs in the field to the machine which he operates and assists in making major repairs to such machine in the tractor [35] repair shop. During the off season and at other times throughout the year, he cuts firewood for use as fuel by the plaintiff's employees living in the plantation villages, hauls stones from the plantation fields on a stone boat sled in order to clear the fields, and assists in the tractor repair shop as a mechanic's helper in repairing tractors. All of his work is performed on the plantation. He works under the general supervision of the Field Superintendent.

39. Takeo Miyazaki (Plowing Employee)—In some work weeks he is engaged exclusively in plowing the fields with a 113 H.P. diesel caterpillar trac-

tor preparatory to planting. In other work weeks he is engaged exclusively in driving a tractor of the same type for other field operations. Occasionally he will also do the following work—operate push rake as relief driver, weed cane fields, haul stones off cane fields with a stone boat sled in order to clear the fields, cut firewood for use as fuel by the plaintiff's employees living in the plantation villages, and assist in the tractor repair shop as a mechanic's helper in repairing tractors. His work is the same during the off season. All of his work is performed on the plantation. He works under the general supervision of the Field Superintendent.

40. Cerilo Lendio (Planting Employee)—He operates a 65 H.P. diesel caterpillar tractor making furrows for the planting of cane seed. He makes minor repairs in the field on the machine which he operates. He assists the mechanics in the tractor repair shop in making major repairs on such machine. During the off season and at other times, he assists mechanics in the tractor repair shop, cuts fire wood for use as fuel by plaintiff's employees living in the plantation villages and operates a trench digger machine for pipelines [36] in the fields, drainage ditches in the fields and ditches for domestic pipelines. All of his work is performed on the plantation. He works under the general supervision of the Field Superintendent.

41. Antone Vierra (Truck Driver)—He hauls field labor almost every day in the early mornings and after work. In some work weeks he is engaged

exclusively in hauling fertilizer and other field supplies from the plantation warehouses and yard area to the plantation fields. In other work weeks he is engaged in general trucking operations for the plaintiff, such as hauling field labor over the plantation to and from their places of work in the fields, hauling incoming store freight from railroad box cars to the plaintiff's retail store and hauling cane tops from the fields to plantation stables to feed mules and horses. On rare and infrequent occasions he may also haul mill and other plantation supplies from Honolulu to the plantation. Upon occasions he will also work as a helper in the garage. His work is the same during the off season. All of his work is performed on the plantation except when he is making trips to and from Honolulu, as indicated before. He works under the general supervision of the Field Superintendent.

42. Augustine Lorenzo (Water Supply Ditchman)—He transmits, as received from his supervisor, orders for the amount of irrigation water to be delivered to the plantation each work period from a reservoir. He is responsible for arranging diversion gates in the main plantation supply canal so as to distribute the water in proper proportion to the various delivery ditches on the plantation. He checks water measurement status to insure delivery of the proper amount of water into the system. He is responsible for the [37] proper maintenance of the irrigation canal system under his charge and for reporting immediately any major



breaks or maintenance requirements to the proper plantation authorities. He patrols the ditch lines under his custody to insure proper delivery of water throughout the work day. During the non-irrigation periods, he cleans ditches and tunnels. All of his work is performed on the plantation. He works under the general supervision of the Field Superintendent.

43. Haru Kibota (Steam Pump Operator)—He operates steam generating and reciprocating pump equipment to supply water, approximately 97.0% of which is for irrigation of plantation cane fields and approximately 3.0% of which is for domestic use at a field village of the plaintiff. Such pump and equipment are a self-contained unit and separate installation located on the plantation two (2) miles from the plantation buildings and yard area as shown on Exhibits "A" and "C." He performs all of his work in the steam generating pump house. When the pump is not being operated, he makes repairs to equipment. He works under the general supervision of the Cane Processing Superintendent.

44. Tadao Watanabe (Rake Operator)—He operates a bulldozer rake for making fire breaks preparatory to the burning of cane and for opening track lines for the laying of portable tracks. He operates the same equipment for fighting emergency cane fires. He bulldozes cane under telephone and power lines and out-of-way corners which cannot be easily reached by the regular cane loading



machine. This cane is bulldozed into piles so that it is available to the regular cane loading machine. If he has any minor breakdowns in equipment, he helps the mechanic and welder repair them in the field. He also assists on any major repairs to [38] equipment which are made at the garage or tractor repair shop. During rainy weather and short shutdown periods, he helps haul cane over portable tracks with the same equipment or acts as a common brakeman on the cane cars which are being moved over the portable tracks to the main lines of the railroad. During the off season he acts as a tractor mechanic's helper in overhauling the tractor which he operates and tractors operated by others. Occasionally during the off season he may work on odd jobs in the mill or cut firewood for use as fuel by plaintiff's employees living in the plantation villages. All of his work is performed on the plantation. He works under the general supervision of the Field Superintendent.

45. Koichi Okouchi (Portable Track Plow Operator)—He operates a portable track plow which is used for the leveling of track lines in the making of beds for portable track. Occasionally he will help mechanics and welders in repairing tractors. He also carries portable rail for building spurs into the cane fields and helps repair such rail. During the off season he helps tractor repair shop mechanics repair the equipment which he operates. He may also during this period aid in repairing portable tracks in the yard adjoining the plantation

buildings where permanent repair work to portable rails is done. Towards the end of the off season after the above repair work is completed, he may be used in a variety of odd jobs—such as erecting scaffolding in the mill, cutting firewood for use as fuel by plaintiff's employees living in the plantation villages, weeding and repairing irrigation ditches and unloading of baled empty jute bags used for bagging raw sugar. All of his work is performed on the plantation. He works under the general supervision of the Field Superintendent.

46. Domingo Menor (Portable Track Lifting Machine Operator)—He operates a tractor with boom in the laying of portable track and in the re-loading of portable track in the cane fields of the plantation. He works with a crew. When the weather is too wet to continue operations, he repairs the equipment which he operates and also portable track. During the off season, he assists the principal mechanics in the tractor repair shop in repairing the equipment which he operates. During this period he also helps in permanent repairs of portable track in the yard adjacent to the plantation buildings and yard area. At the conclusion of such repair work in the off season, he performs odd jobs including erection of scaffolding in the mill, cutting firewood for use as fuel by plaintiff's employees living in the plantation villages, weeding and repairing irrigation ditches, unloading of baled empty jute bags used for bagging raw sugar, and on rare occasions loading bagged sugar into box

cars from the warehouse. All of his work is performed on the plantation. He works under the general supervision of the Field Superintendent.

47. Tsuruo Hayashi (Cane Loading Machine Operator)—He operates a cane loading machine in the fields of the plantation. He makes minor repairs to the machine in case of breakdown or aids regular mechanics and welders in doing so. On major breakdowns he aids in transporting the machine from the field to the cane loading machine repair shop in the plantation building and yard area and in making necessary repairs. During the off season, he aids in overhauling the cane loading machine. After this is completed he does odd jobs such as operating shovel machine to clean reservoirs and various irrigation and drainage ditches of the plantation. During the off season, he may also be used in [40] construction jobs or he may help with any mechanical or construction repair work around the mill or in the tractor repair shop. All of his work is performed on the plantation. He works under the general supervision of the Field Superintendent.

48. Cornelio Asuncion (Haul Cane Tractor Operator)—He operates a haul cane tractor. He hauls empty cane cars into the field and full cars out of the field. He repairs minor breakdowns on the tractor he operates and helps a mechanic on any major breakdowns. During wet weather when harvesting stops, he may assist in weeding or cultivating or help clear storm ditches or assist in the re-

moval of irrigation flume preparatory to plowing. In the off season he helps repair cane cars—changing parts and doing general carpentry work on wooden portions of the rail cars. Such repair work is done in the plantation yard. During such period he may also help in repairing portable rails. During the latter part of the off season, he performs many odd jobs and in some work weeks is employed exclusively cutting firewood for use as fuel by plaintiff's employees living in the plantation villages, repairing houses and pruning shade trees, etc. All of his work is performed on the plantation. He works under the general supervision of the Field Superintendent.

49. Roque Crisostomo (Grader Driver)—In some work weeks he is engaged exclusively in driving and operating a motor driven grader for the purpose of leveling and shaping field and village roads of the plantation and installing water drainage to preserve such roads. In other work weeks he is engaged exclusively in operating a grader to build irrigation banks to prevent the run-off of irrigation water, to level off high spots and fill in old ditches in fields preparatory to [41] planting. In other work weeks he may spend a day or two grading around the plantation buildings and yard area or plantation housing areas preparatory to the construction of a new building or house. He may upon occasion in rainy weather work as a helper in the garage or tractor repair shop repairing trucks or tractors, or help load or unload trucks

which carry field, mill or shop supplies. All of his work is performed on the plantation. He works under the general supervision of the Field Superintendent.

50. Peter Holmberg (Locomotive Driver)—In some work weeks he is engaged exclusively in operating a locomotive with a crew, hauling loaded rail cane cars from plantation cane field switches to the mill yard and returning empty cane cars to the plantation cane fields. In some work weeks he is engaged exclusively in spotting loaded cane cars in the mill yard for unloading into the cane carrier and in removing empty cane cars from the mill yard to nearby spurs. In other work weeks he is engaged exclusively in hauling rail cars loaded with plantation freight from the O. R. & L. spur to the plantation yard and warehouses, and in removing rail cars loaded with sugar and molasses from the sugar and molasses loading stations of the plantation to the O. R. & L. siding; also in such work weeks he picks up empty molasses and sugar cars and spots them on the molasses and sugar loading spurs of the plantation. In other work weeks he operates a locomotive for each of the purposes enumerated above. During the off season he assists in making repairs to plaintiff's locomotives. Part of such repair work is done at the plaintiff's roundhouse and part is done in space adjacent to the plaintiff's machine shop, as shown on Exhibit "F." All of his work is performed on the plantation except [42] when and to the extent that he pushes



loaded sugar and molasses cars from the plantation lines onto the O. R. & L. siding. He works under the general supervision of the Cane Processing Superintendent.

51. Hatsusuke Sera (Section Hand on Permanent Tracks)—He repairs permanent tracks and maintains the plaintiff's railroad rights-of-way. He installs field switches for connecting main lines of the plantation to field portable track lines. He cleans rights-of-way. In the off season he repairs permanent tracks and cleans rights-of-way. All of his work is performed on the plantation. He works under the general supervision of the Cane Processing Superintendent.

52. Takumi Okouchi (Flagman at Road Crossing)—He flags highway crossings on the plaintiff's railroad to protect motorists. During the off season he cleans and weeds the plaintiff's railroad rights-of-way. In wet weather when cane is not being hauled, he may also weed the plaintiff's railroad rights-of-way. All of his work is performed on the plantation. He works under the general supervision of the Cane Processing Superintendent.

53. Pedro Dumlao (Cane Carrier Employee)—He works at the cane carrier one day where he uncouples loaded cane cars preparatory to unloading. He collects cane car tickets, which are placed in the cane cars in the field at the time of loading, showing the type of cane and the time and field at which harvested. He cleans up around the unloading station in the mill. The following day he couples up



empty cars, cleans empty cars, and cleans up around the unloading switch in the mill. The next day he acts as a watchman on the wash carrier, which is part of the equipment in the mill used to clean the cane, to keep it from becoming jammed. The following day he removes stones and foreign material from the cane carrier and maintains the cane carrier full of cane. During the off season he helps to clean up around the cane carrier and helps with repairs on the cane carrier and in the cane cleaning plant. He may also during the off season assist in repairs in the crushing plant. All of his work is performed on the plantation. He works under the general supervision of the Cane Processing Superintendent.

54. Bernabe Hernandez (Scales and Cane Cleaning Plant Employee)—He works in the cane cleaning plant for one-half of his working day where he weighs incoming cane cars, notes the gross weight on the cane car ticket and cleans any adhering cane from the car which has been dumped. The other half of his work day he operates machinery in the cane cleaning plant. He operates machinery at the cane cleaning plant for moving incoming loaded cane cars into the cleaning plant, the cane car dumper, the empty car transfer and the machinery for moving out the empty cars. During the off season he helps repair the conveyors at the cane cleaning plant and also helps repair machinery in the crushing plant. All of his work is performed on the plantation. He works under the

general supervision of the Cane Processing Superintendent.

55. Domingo Guigui (Truck Driver)—He is engaged exclusively during the grinding season in trucking away from the mill rock and dirt removed from the cane at the cane cleaning plant. He deposits such rock and dirt in the fields to fill up holes, gulches and ditches. Such trucking operations are required to be conducted 24 hours a day for the entire harvesting period. During the off season he is engaged in general trucking operations for the plaintiff. All of his work is performed on the plantation except that from [44] time to time he may haul plantation supplies from Honolulu to the plantation. He works under the general supervision of the Field Superintendent.

56. Ushinosuke Kondo (Crushing Plant Employee)—He works in the crushing plant maintaining the flow of cane through the crushing mills by regulating the speed of the driving engines. He also regulates the intake or flow of water used to wash out the last removable sugar in the cane fiber. This water is added to the cane before it passes through the last crushing mill. In the off season he repairs crushing plant equipment. All of his work is performed on the plantation. He works under the general supervision of the Cane Processing Superintendent.

57. Teruichi Kubo (Boiling House Employee)—He is engaged in one of the steps necessary to process sugar cane juices into raw sugar. He boils

low grade massecuites until crystallization has taken place and proper grain size obtained. He also checks on the boiling of the high grade massecuites or mother liquor. On week-ends he makes minor repairs and, if necessary, cleans vacuum pan tubes used in the boiling house operations. During the off season he makes repairs to boiling house equipment. All of his work is performed on the plantation. He works under the general supervision of the Cane Processing Superintendent.

58. Masaiki Oato (Evaporator Station Employee)—He boils sugar juices in a series of evaporators to proper concentration. He also tends the lime mixing station and the clarification station which are in the boiling house of the mill. He makes minor repairs and cleans evaporators over the week-ends and during the off season he repairs boiling house equipment. All of his work is performed on the plantation. He works under the general supervision of the Cane Processing Superintendent. [45]

59. Simon Cumlat—He works in the boiling house of the mill. He cleans high grade massecuites in machines known as high grade centrifugals and discharges cleaned high grade sugar. On week-ends he cleans evaporator tubes. In the off season he helps clean and repair boiling house equipment. All of his work is performed on the plantation. He works under the general supervision of the Cane Processing Superintendent.

60. Apolonio Lazo—He works in the boiling

house of the mill. He cleans low grade massecuites in machines known as low grade centrifugals and discharges cleaned low grade sugar. On week-ends he cleans evaporator tubes. During the off season he helps in cleaning and repairing boiling house equipment. All of his work is performed on the plantation. He works under the general supervision of the Cane Processing Superintendent.

61. Giichi Hamamoto (Sugar Bagging Machine Operator and Loader of Sugar)—He operates a sugar bagging machine on sugar flowing from centrifugals. (Sugar passes from high grade centrifugals into the dryer and thence to a temporary storage bin and thereafter through automatic scales to the bagging machine.) The other half of his day he stacks bagged sugar in rail cars, as it is delivered from the mechanical carrier, for shipments to port. In emergencies when shipping facilities are unavailable, he may assist in stacking bagged sugar in the sugar warehouse for temporary storage and later removing same to rail cars. In the off season he paints the interior of mill buildings and the boiling house equipment; he helps on repairs to boiling house equipment; and he installs rigging for lifting boiling house equipment and lifts with chain tackles or mechanical devices. All of his work is performed on the plantation. He works [46] under the general supervision of the Cane Processing Superintendent.

62. Dionicio Carrit (Fire Room Employee)—He works in the fire room regulating the flow of

bagasse to the furnaces and regulating the furnace draft, all to maintain proper steam pressure in the fire room for the operation of mill machinery, power plant machinery and boiling house equipment. At times of mill stoppages he feeds back by hand excess bagasse to the furnaces. During the off season he cleans boilers, drums and tubes and helps to lay furnace bricks for reconditioning of the fire room. All of his work is performed on the plantation. He works under the general supervision of the Cane Processing Superintendent.

63. Seraphine Robello (Power Plant Employee)  
—He operates power plant electric generating and switching equipment and air compressors. He also makes minor repairs to this equipment. During the off season he makes repairs to power plant generating equipment. (The generating equipment is completely closed during the off season and all power is purchased from Hawaiian Electric Company.) All of his work is performed on the plantation in connection with the generation of electric power for the overall operations of the plaintiff as heretofore described in paragraph 24 hereof. He works under the general supervision of the Cane Processing Superintendent.

64. Toshio Tanaka (Machine Shop Employee)  
—During the crushing season he machines parts for both mill and field equipment during the same work weeks. During the off season his work is largely confined to machine operations on the mill equipment, but also from time to time during such



period it is necessary that he perform machine work on field [47] equipment. When a metal part in the cane processing machinery breaks during the crushing season and cannot be welded, he is called in to take measurements for purposes of repair or making a new part as quickly as possible, as the mill is generally required to close down until the repairs are completed, which, if continued for any appreciable time, may result in a considerable financial loss. He may also upon occasion assist in installation or reassembly of a part in machinery. Upon occasion he will go to the cane loading machine repair shop or tractor repair shop or garage to take measurements for repairing or reproducing broken parts. He also machines axles for cane cars during the entire year and machines parts for the locomotives, steam pumps and electric pumps. All of his machine work, however, is done in the machine shop of the plaintiff which is located adjacent to the mill. He works under the general supervision of the Cane Processing Superintendent.

65. Barney Faria (Employee Engaged in Locomotive Repair)—He makes minor and major repairs on all plantation locomotives. Minor repairs are made at the round house located in the plantation buildings and yard area as is shown on Exhibit "F," and occasionally at some places on the main line of the plaintiff's railroad. Major repairs for the most part are made in the welding shop. His work is the same during the off season. During the off season he is assisted by several of the locomotive



drivers. All of his work is performed on the plantation. He works under the general supervision of the Cane Processing Superintendent.

66. Fumio Sunahara (Welding Shop Employee)  
He is engaged in welding operations, making repairs on mill [48] machinery, irrigation pipe lines, cane cars, locomotives, steam pump equipment and electric driven pumping equipment. The water pumped by such equipment is used for cane field irrigation, by the mill for cane processing, for condensing exhaust steam from power generating units, for domestic use and to supply water to gardens of plaintiff's employees and to a few small farms all of whose produce is consumed locally. When mill equipment requires welding repair during processing operations, he is called to make such repairs as quickly as possible as the mill is generally required to close down until the repairs are completed, which, if continued for any appreciable time, may result in a considerable financial loss. In performing his work, he welds either in the welding shop located adjacent to the mill, or in the mill during crushing operations or at outside points where equipment is being repaired. Occasionally he assists in the repair of field equipment, tractors, trucks and harvesting machinery. Such repair work may be done in the field. Welding of fabricated steel pipes for the irrigation system is done in the welding shop and assembly welding of the pipes is done in the field. He performs the same work during the off season except that the majority

of his work is then performed in the mill. All of his work is performed on the plantation. He works under the general supervision of the Cane Processing Superintendent.

67. Hirosaku Takata (Blacksmith Shop Employee)—He works as a smith. He repairs field implements and makes parts for field equipment. He does a small amount of horseshoeing. Two days of each work week during the crushing operations he makes repairs for the mill. He also makes repairs to cane cars and frames of trucks used throughout the plantation operations. During the off season his work is the same. All of his work is performed on the plantation. He works under the general supervision of the Cane Processing Superintendent.

68. Kiichi Yamada (Tinsmith Shop Employee)—In most work weeks he is exclusively engaged in making irrigation gates from thin-gauge galvanized metal, which gates are used for diverting water into cane furrows in the fields, in making repairs to auto and truck radiators, which autos and trucks are used throughout the plantation operations, in making small cans for spraying of herbicides in the fields and along roads and irrigation ditches and in maintaining them in repair and in repairing knapsack sprayers used in field spraying. In some work weeks, however, in addition to the above, he makes repairs to mill equipment and on rare and infrequent occasions makes up and installs gutters on mill and shop buildings. Irrigation gates are made and radiators repaired in the tinsmith shop located in the plantation buildings and yard areas as shown

on Exhibit "F"; other work is performed outside at the place of construction or repair, but all of his work is performed on the plantation. He works under the general supervision of the Cane Processing Superintendent.

69. Alfred Reyher (Cane Loading Machine Repair Shop Employee)—In most work weeks he is engaged exclusively in making repairs to field cane-loaders and to other field equipment such as grabbers, subsoilers and ratooning equipment. In some work weeks, however, and on emergency occasions during the crushing season when there is insufficient manpower available from the machine and welding shops, he spends part of his time assisting in making repairs in the mill. He does more major overhauling on cranes during the off season. The [50] major portion of his work is done in the field during the crushing season and almost exclusively in the shop during the off season. All of his work is performed on the plantation. He works under the general supervision of the Cane Processing Superintendent.

70. Masaru Ezawa (Tractor Repair Shop Employee)—In most work weeks he is engaged exclusively in making repairs to tractor and field implements. Major overhauls are carried out within the tractor repair shop, but repairs which do not require complete dismantling of equipment and which can be conveniently made there are done in the field. In some work weeks, however, and on emergency occasions during the crushing season when there is insufficient manpower available from the

machine and welding shops, he works in the mill to assist in making repairs. During the off season he spends all of his time overhauling tractors and field implements which are brought in from the field and completely overhauled. All of his work is performed on the plantation. He works under the general supervision of the Cane Processing Superintendent.

71. Damaso Claunan (Garage Employee)—He works exclusively in repairing and maintaining automobiles and trucks used throughout the plantation operations. His work is the same during the off season. All of his work is performed on the plantation. He works under the general supervision of the Cane Processing Superintendent.

72. Antone Robello (Employee Engaged in Servicing Field Equipment)—He delivers gasoline, fuel oil, lubricants and water to plantation field equipment and assists in servicing such equipment. He works out of the plantation garage. His work is the same during the off season. In [51] going to and from the fields he travels over plantation field roads and public highways which run through some plantation areas. He works under the general supervision of the Cane Processing Superintendent.

73. Manuel Damas (Service Station Employee)—He dispenses gasoline, diesel oil and lubricants for all plaintiff's cars and trucks and fuel oil for plantation bath houses at the plantation service station. He also dispenses fuel oil and gasoline to service trucks which in turn supply plantation tractors and caneloaders. He handles no grease jobs or other

such work. His work is the same during the off season. All of his work is performed at the service station which is located in the plantation buildings and yard area on the plantation. He works under the general supervision of the Warehouse Superintendent.

74. Keichi Kamiyama (Electric Shop Employee) —He is engaged in electrical service and repair work. The building in which or from which he works is known as the electric shop and is situated in the plantation buildings and yard area as shown on Exhibit "F". In some work weeks he is engaged exclusively in repairing and servicing electrical equipment situated and used in the plantation sugar mill in connection with the processing of cane into sugar. In other work weeks he is engaged exclusively in repairing and servicing power lines which carry power from the plantation's power house and substation to its electrical irrigation pumps, and also in repairing and servicing such pumps. In some work weeks he is engaged exclusively in repairing and servicing electrical motors used to repair tractors in the tractor repair shop. In still other work weeks he is engaged exclusively in repairing and servicing power transmission [52] lines of the plaintiff which furnish light and power to plantation buildings, motors and dwellings and some non-plantation buildings and dwellings. He also installs household electrical equipment. In still other work weeks he does each of the things which are enumerated above in the same work week. His duties during both the crushing and off seasons are the



same. All of his work is performed on the plantation. He works under the general supervision of the Cane Processing Superintendent.

75. Yoshiji Yamada (Carpenter Shop Employee)—He works as a carpenter in repairing plantation railroad bridges and flumes, constructing and repairing plantation houses, repairing all plantation buildings and performing miscellaneous carpenter shop jobs and mill carpentry. Also he does construction and repair work on steel and concrete pipelines and siphons used in connection with the irrigation and water supply systems. He may go into the mill at any time to construct scaffolding necessary to do emergency repair work. His work is the same in the off season. All of his work is performed on the plantation. He is under the general supervision of the Construction Superintendent.

76. Edwin Mori (Carpenter Shop Employee)—He is engaged in performing carpentry and related repair work on railroad cars. Upon occasion he may assist in keeping office records in connection with the repair and maintenance of such railroad cars. His work is the same during the off season. All of his work is performed on the plantation. He works under the general supervision of the Construction Superintendent.

77. Genjiro Hironaka (Carpenter Shop Employee)—He works exclusively in the carpenter shop. Most of his work is performed in connection with the care and maintenance [53] of shop tools, machinery and equipment. He also repairs plantation equipment, makes scrapers used for cleaning



of centrifugals, conveyor slats used in mill conveyors, and push poles for unloading cane cars, and repairs wood on all station wagons and trucks. His work is the same during the off season. All of his work is performed on the plantation. He works under the general supervision of the Construction Superintendent.

78. Jiro Sakai (Paint Shop Employee)—He works as a painter exclusively. In most work weeks he is engaged exclusively in painting plantation houses. In some work weeks, however, he works exclusively in connection with the painting of office buildings, the plantation gymnasium and club house and other plantation buildings exclusive of the mill. His work is the same during the off season. All of his work is performed on the plantation. He works under the general supervision of the Construction Superintendent.

79. Margaret Fujiwara (Laboratory Employee)—She makes daily analyses of sugar juice and syrups; determines hydrogen ion, density, and salt concentrates of mill boiler water, steam pump boiler water and locomotive boiler water for purposes of maintaining proper mill, pump and boiler water purities while cane is being processed or steam pumps operated. She also types reports and does laboratory office clerical work. She assists in making nitrogen and moisture analysis of cane leaf blades and analysis of total sugars in cane leaf sheaths. During the off season she does clerical work for the general supplies warehouse which handles storage of much of the plantation supplies and materials,

including supplies and materials for the mill, shops, field, plantation houses and administrative offices. She also recharges fire [54] extinguishers as required during the crushing season. All of her work is performed in the laboratory or general supplies warehouse, (except to obtain boiler water samples in the fire room each day), both of which are located in the plantation buildings and yard area as shown on Exhibit "F". She works under the general supervision of the Cane Processing Superintendent except during the off season when she is under the Warehouse Superintendent.

80. Louis Pacheco (Employee Engaged in Cane Leaf Sampling)—He collects daily samples of cane leaves from various fields on the plantation and prepares them for foliar chemical analysis in the plantation laboratory for the purpose of determining the plant food requirements and plant food status of each field of sugar cane on the plantation. After preparing the samples for analysis by an assigned technician, he returns to the main administrative office where he is engaged in clerical work pertaining to the assembly of laboratory information and its correlation with other growth factors and data which will permit the maintenance of a graphic log of all factors of weather, irrigation, and fertilization which might affect the growth and production of sugar cane. He does some of the simple laboratory work. His work is the same during the off season. All of his work is performed on the plantation. He works under the general supervision of the Field Superintendent.

81. Yukishige Tsutsui (Concrete Products Plant Employee)—He works in the concrete products plant located near the plantation buildings and yard area, where he assembles forms, pours concrete, drives a finger-lift in connection with the making of concrete flumes, pipes, house foundation blocks, flume footings, side walk blocks, and [55] other concrete products which are used by the plaintiff in its fields or villages. His work is the same in the off season. All of his work is performed on the plantation. He works under the general supervision of the Construction Superintendent.

82. Yack Chun Lee (General Supplies Warehouse and Heavy Supplies Warehouse Employee)—He is employed in the general supplies warehouse situated about 100 feet from the mill. He checks and keeps records on incoming materials and supplies. He keeps records on warehouse inventory. Occasionally he checks out merchandise to mill, field and shops. He prepares some order lists for new materials and supplies. Upon occasion he will also unpack supplies and place same in storage in a warehouse which is in a building adjoining the general supplies warehouse. His work is the same the year around. All of his work is performed on the plantation. He works under the general supervision of the Warehouse Superintendent.

83. Eiko Sakaguchi (Clerical Employee)—She keeps all records for all construction work performed on cane cars, houses, mill and other plantation buildings and keeps the time of all men in the Construction Department, keeps the records of all

products made at the concrete products plant, keeps an inventory of concrete products on hand, and makes out monthly reports for the Department. She records all work orders and keeps records of all interdepartmental jobs. She does general office work. All her work is done in the headquarters office of the Construction Department situated in the carpenter shop located in the plantation buildings and yard area. Her duties are the same during the off season. All her work is performed on the plantation. She works [56] under the general supervision of the Construction Superintendent.

84. Moses Fernandez (Village Cleaner)—In most work weeks he is engaged exclusively in sweeping up leaves, rubbish and trash in plantation villages. In other work weeks, in addition to the above, he may work in the fields keeping main ditches free from weeds. His work is the same during the off season. All of his work is performed on the plantation. He works under the general supervision of the Field Superintendent.

85. Toshio Kashiwabara (Plumbing Employee)—He constructs and repairs all plumbing installations of the plantation—including plumbing for domestic sewer and domestic water supply systems, houses, mill, and other plantation buildings having toilets and wash room facilities. In many work weeks he is engaged exclusively in constructing and repairing plumbing installations for plantation houses and for the water and sewerage systems servicing such houses. His work is the same during the off season. All of his work is performed on the

plantation. He works under the general supervision of the Construction Superintendent.

## VII.

### PRAYER

Wherefore plaintiff respectively prays that it may be declared, ordered, adjudged and decreed as follows:

(a) That the employee defendants named in paragraphs 38 to 85 hereof and performing the work described in such paragraphs and all other employees of the plaintiff engaged in work similar to such described work [57] are employees “employed in agriculture” as the term “agriculture” is defined in Section 3(f) of the Act and that, therefore, all of said employees are exempt from the overtime provisions of the Act pursuant to the provisions of Section 13(a)(6) thereof; or

(b) If the Court finds that any of said employees referred to in (a) of this prayer is not so “employed in agriculture,” that such employee is engaged in a place of employment where his employer (the plaintiff) is engaged in the “processing of . . . sugarcane . . . into sugar (but not refined sugar) or into syrup . . .” and that, therefore, such employee is exempt from the overtime provisions of the Act pursuant to the provisions of Section 7(c) thereof; and

(c) That the employee defendants, Cornelio Asuncion, Jiro Sakai, Moses Fernandez, and Toshio Kashiwabara, named in paragraphs 48, 78, 84, and 85 hereof, when they are engaged in cutting fire



wood for use as fuel by plaintiff's employees living in the plantation villages, pruning shade trees, cleaning plantation villages, repairing and painting houses, gymnasium and club house in the plantation villages and constructing and repairing plumbing installations for houses in the plantation villages and for the water and sewerage systems servicing such houses, [58] and all other employees of plaintiff when engaged in performing similar work are not "engaged in commerce or in the production of goods for commerce" within the meaning of Sections 6 and 7(a) of the Act and therefore are not subject to the Act, irrespective of whether said employees of plaintiff are exempt from the overtime provisions of the Act pursuant to the provisions of Section 13(a)(6) or of Section 7(c) thereof.

Plaintiff further prays for such other relief as to the court may seem just and proper.

/s/ RUFUS G. POOLE,

/s/ E. C. MOORE,

EXHIBIT "B"

Official

AGREEMENT

This Agreement by and between .....,  
hereinafter called the "Company," and the .....  
....., hereinafter called the "Union,"

Witnesseth:

Whereas, more than a majority of the employees  
of the Company under and subject to this agree-  
ment have associated themselves together in the  
Union and have designated the Union as their sole  
and exclusive representative for the purpose of col-  
lective bargaining with the Company and,

Whereas, the Company has heretofore recognized  
the Union for the purpose of collective bargaining  
on behalf of the said employees under and subject  
to this agreement, now, therefore, it is agreed as  
follows:

SECTION 1

Duration of Agreement

Except as otherwise provided herein, this agree-  
ment shall become effective November 19, 1946, and  
shall remain in effect until August 31, 1948. It  
shall be deemed renewed thereafter from year to  
year unless either party hereto gives written notice  
to the other party hereto of its desire to amend,  
modify or terminate the same, which notice shall  
be served not more than seventy-five (75) days nor  
less than forty-five (45) days prior to said expira-

## Exhibit "B"—(Continued)

tion date, in which event negotiations shall begin within fifteen (15) days from date of notice. This agreement is further subject to reopening by either party solely on the question of wage adjustments upward or downward once between August 1, 1947, and September 30, 1947, inclusive, on thirty (30) days' written notice by either party, and further subject to reopening on the questions of wages, classifications, or hours once between February 1, 1948, and March 31, 1948, [61] on thirty (30) days' written notice by either party. In the event these interim reopening are exercised, negotiations shall commence within ten (10) days from date of notice. In the event of such reopening and failure to agree the parties shall be free to strike or lockout, but solely on the questions of wages or wages, classifications or hours, depending upon the particular reopening. Otherwise, all provisions of Section 14 shall remain in full force and effect.

Notices served under this section shall be accompanied by the proposals of the notifying party.

## SECTION 2

Agreement May Not Be Amended Except by  
Written Document

The parties realize that not infrequently, after agreements similar in part to this agreement have been executed one party thereto will contend that the other party has at some time during the term of the agreement orally agreed to amend, modify,

## Exhibit "B"—(Continued)

change, alter, or waive one or more provisions of the agreement, or, that by the action or inaction of such other party, the agreement has been amended, modified, changed or altered in some respect. With this realization in mind and in order to prevent such contention being made by either party hereto, insofar as this agreement is concerned, the parties have agreed and do hereby agree that no provision or term of this agreement may be amended, modified, changed, altered or waived except by a written document executed by the parties hereto.

## SECTION 3

## Employee Coverage

The only employees covered by this agreement are those employees of the Company in Units No. 1 and 2 while employed in the jobs, the holders of which were eligible to vote in the election conducted by the National Labor Relations Board, and those agricultural employees in Unit No. 3 while employed in the jobs filled by persons whose names appeared on the agreed cross check lists of employees, excluding in every instance, however, those employees employed in the jobs the holders of which were not permitted to vote in said election and all employees whose names did not appear on the agreed cross check list and all employees having the right [62] to hire, fire, promote, demote, transfer, discipline or change the status or wage rate of

## Exhibit "B"—(Continued)

any employee or effectively recommend such action and further excluding minors who have not reached their 16th birthday, and students.

It is understood and agreed that there may be some change in the coverage with respect to employees who have been heretofore excluded as supervisory or who, although supervisory, have been included, such changes to be as the result of agreements based upon the application of the attached Exhibit "A."

## SECTION 4

## Discrimination

(a) The Company will not attempt to intimidate or coerce any employee into refusing to join the Union and will not discriminate against any employee because of his membership in the Union or for legitimate Union activity. Such activity, however, shall not interfere with the Company's operations; nor be conducted during working hours (unless expressly provided for by this agreement).

(b) The Union agrees for itself and its members that neither it, its representatives or members will attempt to intimidate or coerce any employee of the Company for the purpose of compelling any employee to join the Union.

(c) In accord with the policies of the Company and of the Union (as contained in its Constitution) it is agreed that neither party will discriminate against any employee on the basis of race, creed



## Exhibit "B"—(Continued)

or color. The Union undertakes to see that the right of employees to submit questions arising under this paragraph to the grievance machinery of the agreement shall be so exercised and limited as to assure that it will not be the basis for creation of inter-racial problems or dissension.

(d) The Company will not discriminate against the Union or its members by action based upon favoritism toward non-union employees in the granting of premium rates, allocation of housing, promotions, transfers, the application of the classification system, or the conferring of special privileges. [63]

(e) Any claim by the Union that action of a non-union employee is disrupting the harmonious working relations in the plantation or is intended to undermine the Union may be brought to the attention of management by the Union for review, but shall not be subject to the grievance machinery or arbitration.

## SECTION 5

## Seniority

In making lay-offs and recalls after lay-offs and in making promotions or transfers, employees' length of continuous service will govern where all other relevant factors (such as merit, experience, knowledge, ability, physical and mental fitness) are relatively equal.

When job vacancies occur which are to be filled

## Exhibit "B"—(Continued)

by promotion or transfer of employees within the bargaining units, notice of such job openings will be posted on the company bulletin board seventy-two (72) hours prior to their being filled on a regular basis in order to afford employees who desire to be considered therefor an opportunity to signify their interest at the place designated and on the forms provided by the Company within such seventy-two (72) hour period.

All eligible employees of the Company will be considered in filling such job openings, but any employee who fails to file for the opening may not claim to be aggrieved when the opening is filled.

Any grievance arising over transfer or promotion shall be subject to the first four steps of the grievance procedure set forth in Section 19 of this agreement, but it shall not be subject to arbitration if it is not disposed of at Step 4 and the decision and judgment of management shall be final.

This principle of seniority shall not apply to any employee until he shall have completed six (6) months of continuous service with the Company.

Continuous service shall be considered broken by (a) discharge, (b) resignation, or (c) six (6) consecutive months of unemployment. The six (6) months' period may be extended by mutual agreement. [64]

## Exhibit "B"—(Continued)

## SECTION 6

## Wages and Classification

The job classification plan and wage schedule (Exhibit C) become effective November 19, 1946. All employees covered by this agreement will be classified in accordance with the provisions outlined in the Job Classification Manual. All employees' rates will be brought to the rate of their respective grade levels but in no case will an employee receive an increase of less than 25 cents per hour over his previous rate, subject, however, to the provisions of Section 7.

Employees paid on piece-work or production incentive basis will have their pay increased by 25 cents per hour for each straight time hour worked and by 37½ cents per hour for each overtime hour worked subject, however, to the provisions of Section 7. If the increases are worked into piece rates the conversion will be subject to Union approval.

Rates of pay of handicapped and superannuated employees will be established individually provided the parties hereto can come to a mutual agreement. Failing mutual agreement such employees may be dismissed. Such employees, if retained, shall be increased as of November 19 in an amount not less than 25 cents per hour.

After the effective date of the job classification plan and after wage increases as herein provided for, no further wage increases shall be made or

## Exhibit "B"—(Continued)

otherwise effected, except within the provisions of the job classification plan, or as provided under Section 1 hereof.

Production incentive and piece-work plans of compensation will be maintained. The Company may, however, develop alternative production incentive and piece-work plans during the life of this Agreement, with the understanding that if such plans are equitable and better adapted to operating conditions they will become operative if mutually satisfactory.

Grievances over Classification. If any employee or if the Union alleges that an employee is improperly classified by claiming that such employee by reason of his duties is, in fact, performing assignments other than the job classification to which he is allocated, such allegation shall be subject to final determination through the grievance procedure provided in Section 19 of this Agreement. [65]

No allegation, however, that any classified job has been improperly allocated, or that such classified jobs should be allocated to different labor grades than that assigned and described in the Job Classification Manual, shall be subject to the grievance procedure under this agreement. It is also agreed that the job classification system as contained in the Manual shall not be subject to change through reference to the grievance procedure or arbitration.

Exhibit "B"—(Continued)

SECTION 7

Conversion of Perquisites and  
Minimum Guarantee

Simultaneously with the installation of new wage rates as provided in Section 6, all perquisites will be eliminated and employees will be charged for rent and other perquisites in accordance with the attached Exhibit "E." Each individual who is paying rent will have his monthly rental divided by 208 and if the resulting amount, subtracted from his per-hour increase, leaves him less than the following guarantee, his rate will be increased by the amount of the difference.

Status	Minimum Net Guarantee
Single.....	19.0 cents per hours
Married.....	20.0
"    1 Dependent.....	21.0
"    2 Dependents.....	22.0
"    3 Dependents.....	22.0
"    4 Dependents.....	23.0
"    5 or more Dependents.....	23.5

Dependents shall be defined to mean the following persons living on the plantation: (1) children under sixteen (16) years of age, (2) children under eighteen (18) years of age who are attending school, and (3) aged and infirm persons who are recognized as dependents by the plantation.

The family and dwelling status and regular wage rate of each employee will be determined as of November 19, 1946, and his regular rate will be adjusted as of such date to reflect the guarantee so



## Exhibit "B"—(Continued)

established. Subsequent changes in his family or dwelling status will not affect his wage rate. [66] New Hires will not receive the minimum guarantee but will be hired at the classified rate.

In determining the rental amount for the purpose of applying the minimum guarantee unmarried persons renting separate quarters will be charged rentals applicable to such quarters.

In the case of family dwellings occupied by more than one plantation wage earner, the rental of such dwelling for the purpose of the above computation only will be apportioned equally among such regular wage earners.

In the case where a house is occupied both by plantation wage earners and one or more non-plantation wage earners who are paying rent to the plantation for such occupancy, the amount of the house rent to be charged the plantation wage earner for the purpose of the above computation only shall be reduced by the amount of the former rent collected from the non-plantation workers.

It is understood that the rentals for family dwellings are subject to possible adjustment up or down on the basis of the conclusions and recommendations of the appraiser or appraisers in accordance with Exhibit F. Pending such adjustment, the rental charge to any employees affected by the minimum net guarantee will be temporarily fixed at a maximum of 10 per cent below the appropriate rent figures shown on the rental schedule and the

## Exhibit "B"—(Continued)

employee's premium rate fixed accordingly, subject to adjustment on the final determination of rentals by the appraiser at which time both the rent and wage rate will be adjusted in accordance with said determination.

## SECTION 8

(a) Any employee subject to this agreement may be temporarily transferred to another classification or may be used for the relief of employees under other classifications. If so transferred to a lower rated classification, whether at the beginning of or during a shift, he shall receive his regular classification rate or personalized rate whichever is higher. If so transferred to a higher rated classification, whether at the beginning of or during a shift, he shall receive the rate applicable to said higher [67] classification while so transferred commencing with the nearest time interval customarily used by the Company for timekeeping purposes for at least the balance of the shift.

A transfer made for the convenience of a transferred employee (except employees temporarily incapacitated by reason of an industrial accident) shall not be deemed a temporary transfer irrespective of the duration of the transfer.

The Company agrees that except in the case of emergencies every effort will be made to administer the provisions of this section in such manner that demands made upon transferred employees for

## Exhibit "B"—(Continued)

physical effort will not be excessive in comparison with the usual duties.

(b) When an employee in a bargaining unit is temporarily transferred to a higher rated job which is not included in a unit, the question arises as to the wage rate the employee should receive while holding the job to which temporarily transferred. To determine the wage rate the Company will take into consideration the following:

(1) If it is ascertained that the transferred employee, in fact, assumes and exercises all of the duties, authority and responsibility of the job, he will be paid the established minimum wage for the job. The transferred employee is not entitled to receive the personalized rate of the permanent employee which is the result of length of service and merit increases.

(2) If it is ascertained that the transferred employee assumes only part of the responsibilities, duties, authority and responsibilities of the job, Management after consideration of all factors will determine a fair wage rate for the temporary assignment, which shall not be less than 12.5 cents per hour above his regular rate, but in no event higher than the established minimum job rate.

The provisions of subsection (b) shall not be deemed to extend in any way the coverage of this agreement to jobs not now covered or the right of the Union to represent in collective bargaining units as provided in Section 3 above. [68]

## Exhibit "B"—(Continued)

## SECTION 9

## Hours

(a) The work day for calculating overtime shall be twenty-four (24) consecutive hours and the work week seven (7) consecutive work days. The regularly scheduled work days and work week will be conspicuously posted. Such scheduled work days shall provide for eight (8) hour shifts within a maximum spread of nine (9) hours except on operations requiring a larger spread, in which case there will be a maximum spread of fourteen (14) consecutive hours. Questions as to which jobs shall be so excluded shall be left to the plantation manager and local union for settlement. Emergencies such as failure of shift relief to report will be excluded. The seventh day of such scheduled work week shall be defined as the employee's weekly scheduled day of rest.

(b) Work performed by any employee in excess of eight (8) hours in any one work day, except when changing shifts, shall constitute overtime, but only if the work is performed at the request, or on the order of the Management.

(c) Work performed by any employee in excess of forty-eight (48) straight time hours in any one week shall constitute overtime, provided, however, that during the off-season work performed by employees under and subject to the maximum hour provisions of the Fair Labor Standards Act in excess of forty (40) straight time hours in any one

## Exhibit "B"—(Continued)

week shall constitute overtime. No overtime shall be paid unless the work is performed at the request or on the order of the Management. "Off-season" is defined as that period during which the factory is shut down for its annual overhaul. An off-season shall begin on the work day immediately following the work day in which the last sugar is bagged or placed in bulk storage and shall end on the day on which grinding is resumed. Not later than the day on which the off-season begins, the Company shall post on the bulletin board a notice announcing the date the off-season begins; and not later than the day on which the off-season ends, the Company shall post on the bulletin board the date on which the off-season ends. [69]

(d) Work performed by an employee on his weekly scheduled day of rest shall constitute overtime, but only if the work is performed at the request or on the order of the Management.

(e) Except in cases of emergency such as fire, flood, disaster or failure of replacement to relieve an employee, no employee shall be required to work more than fourteen (14) continuous hours without a rest period of eight (8) hours. Continuity shall not be deemed to be broken by meal periods.

(f) An employee reporting for work at his regularly scheduled starting time shall be guaranteed a minimum of two (2) hours' work or two (2) hours' pay at the then prevailing basic straight-



## Exhibit "B"—(Continued)

time rate in lieu thereof, unless such employee had been previously told not to report.

The attached Exhibit "D" sets forth the Industry statement of policy regarding hours worked.

## SECTION 10

## Overtime

Overtime work performed by any employee shall be paid for at one and one-half ( $1\frac{1}{2}$ ) times the employee's regular rate of pay.

Employees shall receive credit for weekly overtime purposes of eight (8) hours on each of the holidays specified in Section 11 regardless of whether work is performed on that date or not.

## SECTION 11

## Holidays

Employees shall receive one and one-half times their regular basic straight time rate for work performed on any of the following days, provided, however, that employer may designate the twenty-four hour period which shall be considered as the holiday for overtime purposes but no less than sixteen (16) hours of said twenty-four (24) hour period must coincide with the calendar holiday:

New Year's Day, Good Friday, Memorial Day, Independence Day, Labor Day, General Election Day, V-J Day, or an agreed-upon alternative, Thanksgiving Day, Christmas Day.

If any of the above mentioned holidays fall on Sunday or the employee's regularly scheduled day

## Exhibit "B"—(Continued)

of rest, the following work day shall be considered as the holiday for the purpose of this section. [70]

## SECTION 12

## Vacations

Every employee covered by this agreement who on July 1 or employment anniversary date shall have worked 265 days in the preceding 12 months' period shall be entitled to a vacation of one calendar week (6 days) with pay computed on the basis of his then prevailing straight time hourly rate if on day work, and his average straight time earnings for such period if on piece work. For each additional unit of six work days worked in excess of 265 work days in the qualifying period every employee covered thereby shall receive an additional day of vacation provided, however, that no more than two calendar weeks (12 days) of vacation shall be allowed in any one calendar year. Vacation days shall be consecutive work days.

In computing vacation credit accrual dates may be extended by seventy-nine (79) days to permit employees an equal opportunity to earn vacations for the period 1946-1947 and where this applies no credit will be given for days worked between August 31 and November 19, 1946.

Employees shall receive credit for purposes of computing their vacations for

1. Lost time due to illness up to a maximum of 12 work days when excused by the plantation.

## Exhibit "B"—(Continued)

2. Lost time due to industrial accidents up to a maximum of 30 work days,
3. Authorized vacation days taken during the year,
4. Regularly scheduled work days if no work is offered on such days,
5. Holidays listed in Section 11, and
6. During the "off-season" if the Company does not offer 6 days work a week credit shall be given for the days when no work is offered. (In no event shall credit be given for the employee's regularly scheduled day of rest unless worked.)

"Work day" as used in this section shall constitute the number of hours of work required by the Company in the particular task in which the employee is engaged.

The Company shall have the sole and exclusive right to determine the period during which any employee shall take his vacation but the expressed [71] preferences of employees will be given due consideration. The Company will notify the employee two weeks in advance of the date upon which his vacation starts.

Vacations shall not be cumulative.

## SECTION 13

## Emergency Call-Out

A minimum of two (2) hours' pay at the prevailing rate will be provided for an employee called to perform emergency work. If the emergency work is performed in less than two (2) hours, it shall be

## Exhibit "B"—(Continued)

the employee's prerogative to go home after its completion and be paid the two hours' pay, or the Company will provide a total of four (4) hours' work if the employee decides to continue working.

## SECTION 14

## Continuous and Uninterrupted Service

It is expressly understood and agreed that during the term of this agreement, any past, existing or future custom or practice of the Company or of the Union to the contrary notwithstanding, there shall be no lockout by the Company, nor any strike, sit-down, refusal to work, stoppage of work, slow-down, retarding of production or picketing of the Company on the part of the Union or its representatives, or on the part of any employee covered by the terms of this agreement.

The presentation of grievances during working hours as authorized pursuant to Section 19 of the contract shall not constitute violation of this section.

## SECTION 15

## Deduction of Union Dues from Wages

The Company agrees to deduct from the wages of such of its employees as shall so request in writing all dues hereafter becoming due from such employees to the Union, not to exceed, however, the sum of Three Dollars (\$3.00) per month and an initiation fee not to exceed Ten Dollars (\$10.00), and to transmit the money so deducted to the Union as hereinafter provided. Any employee desiring to

## Exhibit "B"—(Continued)

have his Union dues deducted may sign a proper form requesting such deduction from his pay and such request for deduction will, if voluntarily made, upon filing with the Company, be honored for the [72] duration of original term of this agreement or the assignment whichever terminates first. Such deduction shall be made not oftener than once a month.

In case any employee does not have the total amount of any deduction, or more, due him on any payroll from which deductions are made in respect of other such employees, the deduction shall be made out of the next succeeding payroll upon which such employee has the total amount, or more, due. It is agreed that authorized deductions for government taxes and for the purpose of paying indebtedness to the Company, garnishments and deductions required by law to be made by the Company shall have priority over deductions for Union dues.

Dues deduction assignment on file prior to August 31, 1946, will be honored (in the amount specified thereon) for the period of the agreement provided the employees who made such assignments have not signified their intention to the contrary pursuant to notice posted in the form agreed upon. It is understood that employees failing to report to work during the period prescribed in the notice by reason of bona fide illness or other reasons beyond their control shall have such additional period for revocation as is necessary and reasonable.

The total amount of any dues deduction and



## Exhibit "B"—(Continued)

initiation fees shall be promptly transmitted by the Company to the Union by check drawn to the order of I.L.W.U., Local...., Unit.... Upon the issue of such check and the transmission of same to..... or his successor of said Union, all responsibility on the part of the Company shall cease with respect to any amount so deducted. The Company shall not be bound in any manner to see to the application of the proceeds of any such check, nor to investigate the authority of any designated officer of said Union to sign any request, to accept any such check, or to collect the same. The Union hereby undertakes to indemnify and hold blameless the Company from any claim that may be made upon it for or on account of any such deduction from the wages of any employee.

## SECTION 16

## Right of Access to the Company's Premises

A duly certified representative of the Union shall be permitted on the [73] Company's premises for the purposes of investigating grievances that have arisen and ascertaining whether or not this agreement is being observed. Such Union representative shall see the Manager or any one of three other representatives to be designated by the Company, any one of whom shall permit the Union representative to enter the Company's premises; provided, however, that the Company may send a representative to accompany the Union representative, but the Union's representative in investigating any griev-

## Exhibit "B"—(Continued)

ance shall be entitled to interview privately any employee covered hereby. It is further provided that such permission to enter the Company's premises shall be exercised reasonably and shall not interfere with the conduct of the Company's operations.

## SECTION 17

## Leave of Absence for Union Business

Any employe elected to an office in the Union which requires full time in the discharge of its duties shall be given a leave of absence of not more than one year without pay and without loss of seniority provided, however, that no more than three such employees shall be on leave of absence at one time and that no more than one employee shall be on leave of absence at one time from any one operation of the Company. Arrangements can be made by mutual consent for temporary leave of absence without pay for union business under circumstances that will not interfere with the Company's operation.

It is understood that arrangements for temporary leaves will be made for attendance at the regular Territorial I.L.W.U., conventions, and the International Convention of the I.L.W.U., provided ample notice is given and satisfactory provision can be made for operations during the employees' absence. It is further understood that requests for such leaves will be limited to not more than three such conventions in a year and that the number of dele-

## Exhibit "B"—(Continued)

gates will not exceed one for each 100 employees up to 500, one for each additional 250 up to 1000, and one per 500 above.

## SECTION 18

## Discharge

[74]

(a) Employees shall be subject to discipline or discharge by the Company for insubordination, pilferage, drunkenness, incompetence, failure to perform the work as required, violation of the terms of this agreement or failure to observe safety rules and regulations, and the Company's house rules which shall be conspicuously posted. Any discharged employee shall, upon request, be furnished the reason for his discharge in writing. Any employee who has not had six (6) months of service with the Company may be summarily discharged.

(b) The Company agrees to notify the local union representatives of proposed changes in house rules prior to the posting of such new rules and to discuss such changes with the union representatives prior to their application, it being understood, however, that in all cases the final decision shall be left to Management.

It is also understood that the Company will undertake a review of existing house rules with a view to eliminating those that are obsolete or inapplicable. Such reviews will be discussed with employee representatives with the understanding that in all cases Management's decision shall be final.

## Exhibit "B"—(Continued)

In the event of conflict between the house rules and provisions of this agreement, the agreement will prevail.

## SECTION 19

## Grievance Procedure

When any employee covered by the terms of this agreement, or the Union believes that the Company has violated the express terms of this agreement and that by reason of such violation his or its rights arising out of such agreement have been adversely affected, he or it, as the case may be, shall be required to follow the procedure hereinafter set forth in presenting the grievance.

Step 1. The grievance may be presented by the employee concerned to his immediate supervisor or it may be presented by a representative of the Union acting in the employee's behalf to the employee's immediate supervisor who will give his answer within forty-eight (48) hours following the presentation of the grievance. At this step in the procedure, the grievance may be presented either orally or in writing and in the discretion of the [75] employee's immediate supervisor may be answered either orally or in writing. The Company promptly upon execution of this agreement, will provide the Union with a list of the individuals who will represent Management at this step in the grievance procedure, and will thereafter promptly advise the Union regarding any changes in connection therewith.

## Exhibit "B"—(Continued)

Step 2. If the grievance is not disposed of in the first step, the complainant employee or a representative of the Union acting in his behalf may present the grievance to the employee's..... Division or Department Head who will give his answer either orally or in writing within seventy-two (72) hours. At this step in the procedure, the grievance may be submitted either orally or in writing. The Company, promptly upon execution of this agreement, will provide the Union with a list of the individuals who will represent Management at this step in the grievance procedure, and will thereafter promptly advise the Union regarding any changes in connection therewith.

Step 3. If the grievance is not disposed of in the second step, the complainant employee may either present the grievance directly or through the Executive Committee of the Union acting in his behalf to the Industrial Relations Committee of the Company. At this step in the procedure, the grievance must be submitted in writing and the Industrial Relations Committee will answer the grievance in writing within one week following presentation of the written grievance to the Committee. The Company promptly upon execution of this agreement will inform the Union of the composition of the Industrial Relations Committee and will keep it informed of any changes therein.

Step 4. If the grievance is not disposed of in step three, it may be taken up in writing either by the employee directly or through the Executive



## Exhibit "B"—(Continued)

Committee of the Union acting in his behalf at a meeting with the manager or his representative. Meetings with the manager shall be scheduled when necessary to resolve grievances appealed to that step of the procedure. After notification is received, meetings shall be held within one week. The Manager's written answer to written grievances shall be given within one week following the meeting.

Step 5. Any dispute involving the meaning, interpretation or application of the terms of this agreement which is not disposed of in Step 4 may be submitted to the Arbitrator in accordance with Section 20.

The Union promptly upon execution of this agreement will provide the Company with a written list of its representatives, who will be empowered to act in an employee's behalf in presenting or investigating grievances in accordance with the procedure set forth herein, and will thereafter promptly advise the Company of any changes that are made.

International Union representatives may be present in meetings of the third step and succeeding steps of the grievance procedure.

The Company will not be required to consider any grievance involving a single incident which has not been presented to the Company within fourteen (14) days following the date of the alleged occurrence of the incident. The Company will not be required to consider any grievance involving an alleged continuing situation or alleged series of re-

## Exhibit "B"—(Continued)

peated identical incidents which have not been presented to the Company within fourteen (14) days following the date on which the situation or incident last occurred.

Failure of the Company to answer a written grievance within the time limits prescribed in each step of the grievance procedure shall permit reference of the case to the succeeding step of the procedure following the expiration of the time limits.

The Company shall not be required to consider any grievance case in which the employee or the Union acting in his behalf does not refer the case to the succeeding step of the grievance procedure within fifteen (15) days following the delivery of written decisions by the Company in Step 3 or in succeeding steps of the grievance procedure.

Addition to Grievance Clause. In the absence of authorization to the contrary grievances are to be presented and considered outside of working hours. It is understood, however, that where reasonable and where possible without undue loss of productive time and interference with operations authority will be extended to present grievances within working hours. [77]

## SECTION 20

## Procedure Before Arbitrator

.....,  
 .....  
 ....., are hereby appointed as a panel  
 of arbitrators. In the event a dispute arises con-

## Exhibit "B"—(Continued)

cerning the application or interpretation of the terms of this agreement which cannot be settled pursuant to the provisions of Section 19, the dispute shall be submitted to one of the arbitrators who shall be chosen as follows: Each party may strike two names from the panel and the remaining arbitrator shall serve in the case. All decisions of the Arbitrator shall be limited expressly to the terms and provisions of this agreement, and in no event may the terms and provisions of this agreement be altered, amended, or modified by the Arbitrator. The Arbitrator shall receive for his services such remuneration as, from time to time, shall be acceptable to him and agreed upon by the parties hereto. All decisions of the Arbitrator shall be in writing and a copy thereof shall be submitted to each of the parties hereto. All fees and expenses of the Arbitrator shall be borne equally by the Union and the Company. Each party shall bear the expenses of the presentation of its own case.

The complainant in every hearing before the Arbitrator shall have the burden of proving his case by a preponderance of the evidence, and, in general, judicial rules of procedure shall be followed at such hearings but the Arbitrator need not follow the technical rules of evidence prevailing in a court of law or equity.

## SECTION 21

## Sick Leave

Effective on the date of the conversion of perquisites in accordance with Section 7, the following

## Exhibit "B"—(Continued)

sick benefit allowance plan will be put into effect. Every employee covered by this agreement who has been in the continuous employment of the Company shall receive benefit payments in accordance with the following schedule:

For disability lasting more than three work days resulting from sickness or from accidents not incurred in the actual performance of the duties [78] of an employee's occupation, hourly rated employees shall be entitled to benefits payable beginning with the fourth day of disability, in accordance with the following plan, provided, however, that no payment will be made for days which are not the employee's regular work days:

Years of Service	Total Days of Benefit per Year at Two-thirds Pay
1 year but less than 2 years.....	6
2 years but less than 3 years.....	12
3 years but less than 4 years.....	18
4 years but less than 5 years.....	24
5 years or more.....	30

Unused benefit allowances will not accumulate from year to year.

All employees will be credited with past service on the date this plan is initiated.

In the event the total benefits for the year are not used up in one period of disability, the balance may be applied in case of a subsequent disability within the year, subject to the same waiting period and other conditions. No benefit shall be paid for disability directly or indirectly due to (1) use of stimulants, drugs, or narcotics, (2) unlawful acts, or (3) willful intent of the employee to injure himself or another.

## Exhibit "B"—(Continued)

Employees shall promptly notify their supervisors and the doctor or nurse employed by or designated by the Company of any sickness or disability for which allowances may be claimed.

In each case of disabling illness or accident, the Company reserves the right to have a doctor or nurse make such examinations from time to time as may be necessary to ascertain employee's condition, and the opinion of such doctor or nurse shall prevail as to (1) whether the employee is disabled on account of sickness or accident, (2) when he is able to return to work, and (3) duration or degree of disability.

One day's wages shall be calculated on the basis of eight (8) straight time hours multiplied by the employee's classification rate.

## SECTION 22

## Document Contains Entire Agreement

This document contains the entire agreement of the parties and neither party has made any representations to the other which are not [79] contained herein.

In Witness Whereof, the parties hereto, through their duly authorized representatives, have executed this agreement on the.....day of....., 1946.

.....

Company

By .....

I.L.W.U. Local..... Unit.....

By ..... [80]



Exhibit "A"—(Attached to Exhibit "B")

### COVERAGE

(Tests to be applied plantation by plantation.)

The parties agree to re-examine the exclusion from the units of jobs on the basis that they were supervisory in nature, with a view toward removing discrepancies and excluding on such basis only bona fide supervisors or lunas as defined by the following standards:

To classify an individual as a supervisor he must fulfill the following requirements.

1. Receives a regular monthly salary, with all the privileges and benefits of employees in a salaried status, and whose compensation shall be the equivalent of at least 12.5 cents per hour in excess of the highest classification rate of jobs regularly supervised or in case of supervision of gangs working on group contract incentive plans at least 12.5 cents per hour above the average earnings of the gang; and

2. Has the authority to hire or fire other employees or whose recommendations as to hiring or firing and as to the advancement, promotion or demotion, transfer and reclassification of other employees will be given particular weight; and 3 below.

3. Who is charged with the responsibility for the operation of a department, or a definite sub-division within a department, and for the operation, maintenance and safeguarding of company machinery, equipment and materials under his supervision, and who in the discharge of his responsibility custom-

arily and regularly exercises discretionary powers, but who does not spend more than 20% of his time performing the same work as is performed by those employees under his supervision, and who supervises and directs as part of his duty, the work [81] of all employees in the department, or subdivision thereof, for which operation he is held responsible and spends not more than 20% of his time performing the same work as is performed by those employees under his supervision.

It is recognized that the application of the above standards may mean the exclusion of some jobs now covered as well as the inclusion of jobs now excluded. Employees now receiving monthly salaries will not be converted to hourly rates by reason of their inclusion in the unit.

(These tests shall not be construed to extend the coverage of the contract to any jobs or employees now excluded except those now excluded solely on the basis that they are supervisory and do not meet the above standards. The agreement reached in this document shall not be used to prejudice the position of either party on the interpretation or application of the Hawaii Employment Relations Act or the National Labor Relations Act.) [82]

Exhibit "B"—(Attached to Exhibit "B")

(Exhibit "B" will not be used in the general contract, but there will be a separate exhibit in the contract of Waialua, Ewa, H. C. & S. and Honolulu plantations based upon Exhibit "B" of the memorandum.)

## Exhibit "C"—(Attached to Exhibit "B")

## INDUSTRY WAGE SCHEDULES

Grade	Classification Schedule Cents per Hour	Revised Schedule Including Wage Increase
1.....	43½	70½
2.....	47	74
3.....	51½	78½
4.....	56	83
5.....	61½	89
6.....	68	96
7.....	75½	104½
8.....	84	114
9.....	94	125
10.....	106	138

## Exhibit "D"—(Attached to Exhibit "B")

INDUSTRY STATEMENT OF POLICY  
REGARDING HOURS WORKED

Time on each work day shall commence at the time established for the employee's scheduled shift and shall continue until the time fixed for the ending of such shift at the place of work plus any overtime requested by Management; but it shall not include:

(a) Non-working meal periods.

(b) Time between parts of a split shift.

(c) Time elapsing between the end of an employee's regular shift and the starting of overtime work on a succeeding shift when the employee is free to do as he chooses.

(d) Time not worked in excess of "called out" time.

The following cases illustrate time also treated as hours worked:

1. Time during which an employee operates a vehicle pursuant to Company orders for the transportation of other employees or of materials and

ending with its return to the designated place of storage.

2. Time spent by all employees between the moment (a) when materials or tools, not normally retained in the possession of the employees, are picked up, or (b) when work assignments of instructions are issued, and the scheduled starting time at the place of work; provided that all such time occurs within the employer's scheduled work-day.

3. Likewise time at the close of work on the workday between the scheduled finishing time and the time when all instructions are completed and materials and tools (covered in 2 above) are returned to their designated place of storage. [85]

4. Time spent in transportation from one field to another or one job to another during the shift. In this case time for all workers thus transported will be paid for at the classified hourly rate of the job classification on which the employee is working or transferred to whichever is the greater.

Employees shall not be required to assemble for instructions on their own time.

In the matter of providing transportation for workers in the fields back to the assembling points or their homes it shall be the policy of the companies to offer transportation in such a manner that it will not require any worker to wait more than 15 minutes after the end of the regularly scheduled work day before boarding the vehicle. Management will make every effort, barring circumstances beyond its control, to comply with this policy. [86]

Exhibit "E"—(Attached to Exhibit "B")  
 INDUSTRY MONTHLY RENTAL RATES OF DWELLINGS ACCORDING  
 TO AREA, CLASS AND CONDITION OF BUILDING

	Class 1			Class 2			Class 3		
	A	B	C	A	B	C	A	B	C
500 Sq. Ft. or less.....	\$10.00	\$12.50	\$15.00	\$12.50	\$15.00	\$18.00	\$15.00	\$18.00	\$21.50
600 .....	11.00	14.00	17.00	14.00	17.00	20.50	17.00	20.50	24.50
700 .....	12.00	15.50	19.00	15.50	19.00	23.00	19.00	23.00	27.50
800 .....	13.00	17.00	21.00	17.00	21.00	25.50	21.00	25.50	30.50
900 .....	14.00	18.50	23.00	18.50	23.00	28.00	23.00	28.00	33.50
1000 .....	15.00	20.00	25.00	20.00	25.00	30.50	25.00	30.50	36.50
1100 .....	16.00	21.50	27.00	21.50	27.00	33.00	27.00	33.00	39.50
1200 .....	16.75	22.50	28.50	22.50	28.50	35.00	28.50	35.00	41.75
1300 .....	17.50	23.00	30.00	23.50	30.00	37.00	30.00	37.00	44.00

- A. Rental for houses with floor area falling between the above points will be adjusted to the nearest 25c per month.  
 B. This schedule will not apply to future construction. (Maximum rental on Clokele houses now being completed, \$43.50 per month.)  
 C. Rental adjustments for improvements or repairs affecting the class, condition or floor area of the house will be made effective on the first of the month following completion of the work.  
 D. Floor area is that area expressed in square feet under the roof line of each dwelling including service facilities directly attached to the house or, in an elevated house, the enclosed or concrete area on the ground floor.  
 E. Water, when metered, will be charged for at current county rates in effect in the locality. Otherwise a flat rate of \$1.00 per month will be charged to families occupying dwellings up to 1000 square feet in floor area and \$1.50 per month for those from 1001 to 1500 square feet.  
 F. Electricity will be purchased by each tenant for his own account from the local public utility where available; otherwise from the plantation at public utility rates.  
 G. Fuel will be purchased by each tenant from any sources available to him.



INDUSTRY MONTHLY RENTAL RATES OF BEDROOMS IN SINGLE MEN'S QUARTERS ACCORDING TO HOUSE FLOOR AREA PER BEDROOM, CLASS AND CONDITION OF BUILDING AND PER CAPITA MINIMUM RENTALS

House Floor Area per Bedroom	Class 1			Class 2			Class 3		
	A	B	C	A	B	C	A	B	C
100 Sq. Ft. or less.....	\$ 5.00	\$ 6.75	\$ 8.50	\$ 6.75	\$ 8.50	\$10.50	\$ 8.50	\$10.50	\$12.75
125 .....	5.25	7.25	9.25	7.25	9.25	11.50	9.25	11.50	14.00
175 .....	5.50	7.75	10.00	7.75	10.00	12.50	10.00	12.50	15.25
225 .....	5.75	8.25	10.75	8.25	10.75	13.50	10.75	13.50	16.50
275 .....	6.00	8.75	11.50	8.75	11.50	14.50	11.50	14.50	17.75
325 .....	6.25	9.25	12.25	9.25	12.25	15.50	12.25	15.50	19.00
PER CAPITA MINIMUM RENTALS									
100 Sq. Ft. or less.....	3.00	4.00	5.00	4.00	5.00	6.25	5.00	6.25	7.25
125 .....	3.25	4.25	5.50	4.25	5.50	7.00	5.50	7.00	8.00
175 .....	3.25	4.50	6.00	4.50	6.00	7.75	6.00	7.75	8.75
225 .....	3.50	4.75	6.50	4.75	6.50	8.50	6.50	8.50	9.50
275 .....	3.50	5.00	7.00	5.00	7.00	9.25	7.00	9.25	10.25
325 .....	3.75	5.25	7.50	5.25	7.50	10.00	7.50	10.00	11.00

- A. Rental for bedrooms with house floor area per bedroom falling between the above points will be adjusted to the nearest 25c per month.
- B. This schedule will not apply to future construction.
- C. Rental adjustments for improvements or repairs affecting the class, condition or square foot area of the building will be made effective on the first of the month following completion of the work.
- D. House floor area per bedroom is the total floor area of the house divided by the number of bedrooms in the house.
- E. Water, when metered, will be charged for at current county rates in effect in the locality. Otherwise a flat rate of \$0.50 per month will be charged each single occupant of single men's quarters.
- F. Electricity will be purchased by each tenant for his own account from the local public utility where available; otherwise from the plantation at public utility rates.
- G. Fuel will be purchased by each tenant from any source available at him.

## Exhibit "E"—(Continued)

## CLASSIFICATION OF DWELLINGS

The following descriptions set forth the types of construction and of the facilities provided:

Class 1. A dwelling constructed of rough merchantable lumber, stud framing, single wall, floors 1x12 inches or 1x6 inches; stock sized or T & G doors; sliding windows; drop cord electrical outlets; toilet, bathing and laundry facilities detached; kitchen with sink and tap may be attached or detached.

Class 2. A dwelling constructed of surfaced lumber; ceiling of Canec, surfaced lumber, or other material; single wall; stock doors, sliding or hung windows; stain or paint outside and inside; drop cord electrical outlets; kitchen, with sink and tap, attached; toilet and bathing facilities and laundry, with laundry trays, detached, sewer or cesspool connections.

Class 3. A dwelling constructed of surfaced lumber; Canec or surfaced lumber ceiling; T & G floors; stock doors; sliding, double hung or casement windows; stain or paint outside and inside; clothes closets; some kitchen cabinet work; floor plugs and outlets for electrical equipment; shower or bathtub, standard flush toilet, lavatory and kitchen sink in the dwelling; individual laundry and laundry trays; sewer or cesspool connections.

All of the houses in each of the categories may not correspond in every detail.

The three classes of physical condition are as follows:

Exhibit "E"—(Continued)

Class A. A dwelling requiring major repairs or thorough renovating or possibly complete replacement.

Class B. A dwelling requiring general, but not major, repairs and painting.

Class C. A dwelling which has been well maintained and repaired, or which has been built, remodeled, or thoroughly renovated within the past five years and well maintained since. [89]

TEMPORARY VOLUNTARY MEDICAL  
PLAN

The plan provides that any person who enjoyed medical perquisites on the plantation heretofore is eligible to join and further as a condition of membership in the temporary medical plan, membership fees become effective as of November 19, 1946.

Brief description of medical plan forms:

I. Application for Membership, (Triplicate).

This form, when properly filled out, will provide information to determine the amount of monthly dues.

II. Schedule of Rates and Certificate of Membership.

This form provides the employee with information relative to the rates being charged and also a certificate that the employee has become a member of the plan at the applicable rate.

III. Rejection of Plan by Employee.

**Exhibit "E"—(Continued)**

This document should be signed by every employee who refuses to join the plan within an allotted time.

Attention is called to the fact that for simplification, all forms are made up for Waialua Agricultural Company, Ltd., and, of course, are sample copies only. It is anticipated that each plantation will reproduce the forms for their own use.

It is understood that a regular Medical plan is to be developed to become effective six months from date of the contract. It will provide similar coverage to the H.M.S.A. Lanai plan and at rates substantially equivalent to those then prevailing under that plan.

The formal Medical plan may be an insured plan, the H.M.S.A. plan, or the temporary plan may be continued, at the option of the plantation. If the temporary plan is continued hospital facilities may be consolidated or transferred. [90]

**TEMPORARY VOLUNTARY MEDICAL PLAN  
FOR WAIALUA AGRICULTURAL CO., LTD.  
EMPLOYEES AND THEIR FAMILIES**

This Plan is offered by the Company to provide for continuation at the lowest possible cost to the employee of the medical care heretofore furnished to employees and their families.

Exhibit "E"—(Continued)

SCHEDULES OF RATES

(Per Month)

Earnings—	Schedule 1
Wages or	Employees within
Salary Group	Units 1, 2 & 3
Single .....	\$1.65
Married .....	1.40
Spouse (Additional) .....	1.10
First Child (1-18) .....	1.10
Additional Children (1-18) .....	1.10
* Maximum Rate .....	6.00

\* Families of six or more pay maximum rate. Size of family unlimited.

CERTIFICATE OF MEMBERSHIP

WAIALUA AGRICULTURAL CO., LTD.

MEDICAL PLAN

This certifies that as of....., 19....  
 .....has become a member of  
 Waialua Agricultural Co., Ltd., Medical Plan.

Payment made as follows:

Dues—Month of .....	\$
.....	\$
.....	\$.....
Total	\$

WAIALUA AGRICULTURAL  
 CO., LTD.

By ..... [91]



**Exhibit "E"—(Continued)**

Sample Copy (To be prepared in triplicate)

**APPLICATION FOR MEMBERSHIP IN WAIALUA  
AGRICULTURAL COMPANY, LTD., MEDICAL PLAN**

I hereby make application for membership in the Waialua Agricultural Co., Ltd., Medical Plan. I agree to abide by the regulations set up by the Company for this Medical Plan and I hereby authorize the Company to examine any Hospital or Physician's records concerning me.

Full Name (Print).....

First Middle Last Name

Address: (Camp &amp; House No.).....

Bango Number:.....

Job Title:..... Age:..... Height:.....

Weight:..... Married:..... Single:..... Male:.....

Female:.....

List all dependents below:

(Wife, husband, aged or infirm parent living with employee and classified by the plantation as dependent on Nov. 19, 1946, and all children under 18 yrs. old.)

	Name	Date of Birth	Relationship
1.	.....	.....	.....
2.	.....	.....	.....
3.	.....	.....	.....
4.	.....	.....	.....
5.	.....	.....	.....
6.	.....	.....	.....
7.	.....	.....	.....
8.	.....	.....	.....

I understand that upon execution of this application and payment of dues as indicated below, I will be entitled to service under the plan.

I also understand that I will continue to be a member of the plan only as long as I am in the employ of the company and monthly dues are paid on or before the 15th of each month.

Date:..... Signature:.....

Signature of Witnesses if Application

is signed by Mark: .....

Amount of monthly dues:.....Dues Schedule No.....

Amount paid with this application: \$...... [92]

**Exhibit "E"—(Continued)**

Sample Copy (Alternate)

(To be prepared in triplicate)

**APPLICATION FOR MEMBERSHIP IN WAIALUA  
AGRICULTURAL COMPANY, LTD., MEDICAL PLAN**

I formally accept the temporary Medical Plan of the Waialua Agricultural Co., Ltd., pursuant to the Agreement of Nov. 19, 1946 between my authorized collective bargaining agents and representatives of the Waialua Agricultural Co., Ltd. I am aware that after May 19, 1947, and in accordance with the understanding between representatives of the company and my collective bargaining agents, another plan with standard provisions for medical and hospital service may be substituted for this plan. I also understand that at the time of substitution this plan will be discontinued, and all obligation of the Waialua Agricultural Co., Ltd., will cease.

Full Name (print) :.....

First Middle Last Name

Address: (Camp & House No.).....

Bango Number :.....

Job Title:..... Age:..... Height:.....

Weight:..... Married:..... Single:..... Male:..... Female:.....

List all dependents below:

(Wife, husband, aged or infirm parent living with employee and classified by the plantation as dependent on Nov. 19, 1946, and all children under 18 years old.)

Name: Date of Birth: Relationship:

1. ....
2. ....
3. ....
4. ....
5. ....
6. ....
7. ....
8. ....

I understand that upon execution of this application and payment of dues as indicated below, I will be entitled to service under the plan.

I also understand that I will continue to be a member of the plan only as long as I am in the employ of the company and monthly dues are paid on or before the 15th of each month.

Date:..... Signature:.....

Signature of Witnesses if application

is signed by mark: .....

Registration Fee: \$1.00

Amount of Monthly Dues: \$...... Dues Schedule No.....

Amount paid with this application \$...... [93]

## Exhibit "E"—(Continued)

EMPLOYEE'S REJECTION OF TEMPORARY  
MEDICAL PLAN

(Sample Copy)

I have received explanatory data outlining the Temporary Medical Plan being offered to employees of Waialua Agricultural Company, Limited, and for which I am eligible. I have had an opportunity to apply for participation.

After due consideration I elect not to participate in this Plan.

I understand that this Plan is the only Company plan under which my employer will aid in providing medical attention for me and my family.

.....

Signature of Employee

.....

Date

.....

Signature of Witness [94]

## Exhibit "F"—(Attached to Exhibit "F")

Statement of Consideration to Guide Appraisal and  
Determination of Fair Rentals on Existing  
Plantation Houses

1. The employers do not intend to make housing a profit making venture, as such.

2. Computation of fair rentals will contemplate in addition to the foregoing, consideration of the

following factors as well as any others considered pertinent by the appraisers.

(a) Fair value of land and dwellings will be determined by the American Appraisal Company if approved by the Union or other appraiser of comparable standing mutually agreed upon, taking into consideration such factors as in the opinion of the appraisers should be considered in recognition of the principle that the housing operation is not being undertaken as a profit making venture, as such, it being stipulated, however, that book value will not be used in establishing said value.

(b) Interest and depreciation based on (a).

(c) Taxes.

(d) Insurance.

(e) Maintenance and Repairs.

(f) Village Services.

(g) Administrative Expense.

3. Any adjustments in rent will be made on an industry wide basis.

4. Union will be afforded an opportunity to present its position to the appraiser (prior to final determination) on the determination of fair rentals on existing plantation housing including the presentation of their views on the weighing or consideration that in its opinion should be given any or all of the above factors. [95]





[Title of District Court and Cause.]

### AMENDMENT OF COMPLAINT

Now comes the plaintiff, by its attorneys, and, in accordance with Rule 15(a), amends its Complaint in the above entitled cause by striking out paragraphs 6 and 7 and inserting in lieu thereof the following: [105]

6. Plaintiff contends:

(a) That all of the employee defendants, as well as all other employees of plaintiff similarly situated, are employees "employed in agriculture" as the term "agriculture" is defined in Section 3(f) of the Act and that, therefore, such employees are exempt from the overtime provisions of the Act i.e., Section 7(a), as provided by Section 13(a)(6) of the Act;

(b) That if any of said employees is not so exempt by virtue of said Section 13(a)(6), he is an employee in a place of employment where his employer, i.e., the plaintiff, is engaged in the "processing of . . . sugar cane . . . into sugar (but not refined sugar) or into syrup. . . ." and that, therefore, as provided by Section 7(c) of the Act, such employee is exempt from the overtime provisions of the Act, i.e., Section 7(a), and that such exemption is applicable throughout the year, including the "off season" referred to in paragraph 31 hereof; and

(c) That the employee defendants, when they are engaged in work in connection with the repair and maintenance of the plantation houses and related

facilities hereinafter described, and all other employees of plaintiff when they are engaged in performing similar work are not "engaged in commerce or in the production of goods for commerce" as the terms "commerce" and "produced" are defined in Sections 3(b) and 3(j) of the Act and that, therefore, none of the provisions of the Act applies to said employees, whether or not said employees are exempt from the overtime provisions of the Act by virtue of Section 13(a)(6) or of Section 7(c).

7. Defendants contend and have done so repeatedly to the plaintiff:

(a) That none of the employee defendants and no [106] other employees of the plaintiff who are similarly situated are exempt from the overtime provisions of the Act by virtue of Section 13(a)(6) or Section 7(c) or otherwise;

(b) That if any of said employees is exempt by virtue of Section 7(c), such exemption is inapplicable to said employees during the "off season" referred to in paragraph 31 hereof; and

(c) That all of the employee defendants and all other employees of the plaintiff who are similarly situated are "engaged in commerce or in the production of goods for commerce" within the meaning of Sections 6 and 7(a) of the Act.

Dated: .....

/s/ RUFUS G. POOLE,

/s/ E. C. MOORE.

[Endorsed]: Filed July 18, 1947. [107]

[Title of District Court and Cause.]

ANSWER

Come now the defendants above named and by way of answer to the complaint on file herein, admit, deny and aver as follows:

I.

Defendants admit, except as follows, the general accuracy of the allegations contained in subparagraphs 2 to 37, inclusive, of said complaint:

(A) Defendants have no information or belief with reference to the allegations contained in subparagraph 2 of said complaint sufficient to enable them to answer such allegations, and based on such lack of information or belief, defendants deny each and every, all and singular, the allegations contained in said subparagraph 2.

(B) Defendants deny each and every, all and singular, the allegations contained in subparagraph 6 of said complaint.

(C) With reference to subparagraph 9 of said complaint, [108] defendants deny that, "Without a determination of the controversy herein it is impossible for the plaintiff to know and ascertain whether it is violating the Act in not paying overtime compensation to said employees in accordance with Section 7(a) thereof," and in this connection defendants aver that they are informed and believe that plaintiff has been for some time and is now paying overtime compensation pursuant to the Fair Labor Standards Act to all or at least some of the defendants herein, and others similarly situated,

and defendants demand of plaintiff that it produce the names of such of defendants, and others similarly situated, as are being so compensated and the basis upon which such overtime compensation is being so paid.

Further referring to the allegations of said subparagraph 9, defendants deny that, "If the contentions of the defendants are correct the plaintiff will be subject to . . . (e) strikes and labor disturbances if it fails to comply with the contentions of the defendants"; or that plaintiff will be subject to "(f) great expense in paying overtime compensation in accordance with the provisions of Section 7(a) of the Act to the employee defendants and other employees of plaintiff engaged in work similar to that of the employee defendants and in planning and instituting new methods of operation resulting in great loss and damage to it in order to meet the expense of paying such overtime, if, by reason of the defendants' contentions and the perils of not complying with same, plaintiff feels compelled to endeavor to comply."

(D) With reference to the allegations of subparagraph 10 of said complaint defendants deny that all of the equipment of the plaintiff in plaintiff's "mill," as such term is defined in said subparagraph 10, is used in the actual processing of sugar cane into raw sugar.

(E) With reference to the allegations of subparagraph 24 of said complaint, defendants have no information or belief [109] sufficient to enable

them to answer the allegations in said subparagraph that, "None of the electric power distributed to non-plantation users by the plaintiff is used for or in connection with the production of goods for interstate commerce, nor is it used to operate any instrumentality of interstate commerce nor is it transmitted into interstate commerce," and based upon such lack of information or belief, defendants deny each of the above quoted allegations.

## II.

With reference to the allegations contained in subparagraphs 38 to 85, inclusive, of said complaint, defendants admit, deny and aver as follows:

(A) Subparagraph 38, Ciraco Maneja. Defendants admit that this employee defendant is "employed in agriculture" (as the term "agriculture" is defined in Section 3(f) of the Fair Labor Standards Act, hereinafter referred to as "the Act") only during such times as he is engaged in preparing ratoon cane fields, or in making minor repairs in the field to the tractor which he operates in the ratooning work.

(B) Subparagraph 39, Takeo Miyazaki. Defendants admit that this employee defendant is "employed in agriculture" (as the term "agriculture" is defined in Section 3(f) of the Act except when he is engaged in cutting firewood for use as fuel by the plaintiff's employees living in the plantation villages, or assisting in the tractor repair shop as a mechanic's helper in repairing tractors.

(C) Subparagraph 40, Cerilo Lendio. Defend-



ants admit that this employee defendant is "employed in agriculture" (as the term "agriculture" is defined in Section 3(f) of the Act) only when he is engaged in operating tractors making furrows for the planting of cane seed and in making minor repairs in the field on the machine which he operates.

(D) Subparagraph 41, Antone Vierra. Defendants admit that [110] this employee defendant is "employed in agriculture" (as the term "agriculture" is defined in Section 3(f) of the Act) only when he is engaged exclusively in hauling fertilizer and other field supplies from the plantation warehouses and yard area to the plantation fields.

(E) Subparagraph 42, Augustine Lorenzo. Defendants admit that this employee defendant is "employed in agriculture" (as the term "agriculture" is defined in Section 3(f) of the Act) except when he is engaged in clearing ditches and tunnels during non-irrigation periods.

(F) Subparagraph 44, Tadao Watanabe. Defendants admit that this employee is "employed in agriculture" (as the term "agriculture" is defined in Section 3(f) of the Act) only when he is engaged in bulldozing cane under telephone and power lines and out-of-way corners which cannot easily be reached by the regular cane loading machine.

(G) Subparagraph 47, Tsuruo Hayashi. Defendants admit that this employee defendant is "employed in agriculture" (as the term "agriculture" is defined in Section 3(f) of the Act) only when

he is operating a cane loading machine in the fields of the plantation or in making minor repairs to such machine in the field.

(H) Subparagraph 48, Cornelio Asuncion. Defendants admit that this employee defendant is "employed in agriculture" (as the term "agriculture" is defined in Section 3(f) of the Act) only when he may be assisting in weeding, cultivating or helping to clear storm ditches or assisting in the removal of irrigation flume preparatory to plowing.

(I) Subparagraph 49, Roque Crisostomo. Defendants admit that this employee defendant is "employed in agriculture" (as the term "agriculture" is defined in Section 3(f) of the Act) only when he is engaged exclusively in operating a grader to build irrigation banks to prevent the run-off of irrigation water, or to [111] level off high spots and fill in old fields preparatory to planting.

(J) Subparagraph 56, Ushinosuke Kondo; Subparagraph 57, Teruichi Kubo; Subparagraph 58, Masaiki Oato; Subparagraph 59, Simon Cumlat; and Subparagraph 60, Apolonio Lazo. Defendants admit that these employee defendants are, during the so-called grinding or crushing season only, and then only between 2:00 p.m. Sunday of each week and 2:00 p.m. of the following Saturday of each week, engaged in a place of employment where their employer (the plaintiff) is engaged in the "processing of . . . sugar cane . . . into sugar (but not refined sugar) or into syrup . . ."

(K) Subparagraph 61, Giichi Hamamoto. De-

fendants admit that this employee defendant is engaged in a place of employment where his employer (the plaintiff) is engaged in the "processing of . . . sugar cane . . . into sugar (but not refined sugar) or into syrup . . ." only when he is operating a sugar bagging machine which bags raw sugar flowing from the centrifugals.

(L) Subparagraph 79, Margaret Fujiwara. Defendants admit that this employee defendant is engaged in a place of employment where her employer (the plaintiff) is engaged in the "processing of . . . sugar cane . . . into sugar (but not refined sugar) or into syrup . . ." only when she is making daily analyses of sugar juice and syrups, and analyses of mill boiler water, steam pump boiler water and locomotive boiler water to determine the hydrogen, density and salt concentrates thereof, and only while cane is actually being processed in plaintiff's mill.

Except as admitted above, defendants deny that any of the employee defendants, whose work is described in subparagraphs 38 to 85, inclusive, or any person similarly situated, are "employed in agriculture" as defined in Section 3(f) of the Act), or that any of said employees or persons are engaged in a place of employment where their employer (the plaintiff) is engaged in the "processing [112] of . . . sugar cane . . . into sugar (but not refined sugar) or into syrup . . ." Defendants further aver that all of the employee defendants whose work is described in subparagraphs 38 to 85, in-

clusive, are “engaged in commerce or in the production of goods for commerce” or in a “process or occupation necessary to the production thereof.”

### Prayer

Wherefore, defendants respectfully pray that at the trial of this action the plaintiff will be required by the Court to advise it as to those of the defendants, and others similarly situated, who are being paid by plaintiff the overtime compensation provided for in the Act, and that upon the pleadings herein, and evidence adduced at the trial of this action, the Court declare, order, adjudge and decree as follows:

(A) That none of the employee defendants listed in subparagraphs 38 to 85, inclusive, of the complaint on file herein and performing the work described therein, except as conceded by defendants in the foregoing answer, nor other persons similarly situated, are employees “employed in agriculture,” as the term “agriculture” is defined in Section 3(f) of the Act, and that, therefore, none of said employees or persons come within the exemption set forth in Section 13(a)(6) of the Act.

(B) That although certain of the employee defendants, as more particularly specified in the foregoing answer, and other persons similarly situated, are from time to time during certain work weeks of the processing season, employed in a place of employment where their employer (the plaintiff) is engaged in the “processing of . . . sugar cane . . . [113] into sugar (but not refined sugar) or

into syrup . . .” from 2:00 p.m. Sunday of each work week to 2:00 p.m. of the following Saturday of such work week, they are not so employed between 2:00 p.m. Saturday and 2:00 p.m. of the following Sunday of each week during such processing season, nor at any time during the so-called off-season, as such off-season is more particularly described in the complaint on file herein.

(C) That none of the employee defendants named in subparagraphs 38 to 85, inclusive, except as specified in the preceding paragraph, nor other persons similarly situated, are engaged in a place of employment where his employer (the plaintiff) is engaged in the “processing of . . . sugar cane . . . into sugar (but not refined sugar) or into syrup . . .” either during the processing season or during the so-called off-season.

(D) That all of the employee defendants named in subparagraphs 38 to 85, inclusive, of the complaint on file herein, and other persons similarly situated, are “engaged in commerce or in the production of goods for commerce,” or in a “process or occupation necessary to the production thereof.”

(E) That all of the employee defendants named in subparagraphs 38 to 85, inclusive, in performing the work described therein, except as to certain work of some of said defendants, as more particularly set forth in paragraphs A and B of this prayer, and all persons similarly situated, are subject to the overtime provisions of the Act.

(F) That plaintiff shall forthwith render an [114]



accounting to each employee defendant, and to all other persons similarly situated, and shall pay to each such employee and person the unpaid overtime compensation due him under the Act, plus an additional and equal sum as liquidated damages, subject, however, to the provisions of any compromise or release agreements heretofore entered into between plaintiff and such employees and persons, or their duly authorized representatives.

(G) That plaintiff shall reimburse the defendants for their costs of suit incurred herein, and in addition thereto shall pay to counsel for defendants a reasonable sum as and for attorney's fees.

Defendants further pray for such other relief as to the Court may seem just and proper.

Dated September 12, 1947.

GLADSTEIN, ANDERSEN,  
RESNER & SAWYER,  
/s/ RICHARD GLADSTEIN,  
Attorneys for Defendants.

[Endorsed]: Filed Sept. 12, 1947. [115]

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[Title of District Court and Cause.]

### STIPULATION

It Is Hereby Stipulated by and between Waialua Agricultural Company, Limited, Plaintiff herein, by and through Rufus G. Poole and E. C. Moore, its Attorneys, and Ciraco Maneja, Takeo Miyazaki, Cerilo Lendio, Antone Vierra, Augustine Lorenzo,

Haru Kibota, Tadao Watanabe, Koichi Okouchi, Domingo Menor, Tsuruo Hayashi, Cornelio Asuncion, Roque Crisostomo, Peter Holmberg, Hatsu-suke Sera, Tkumi Okouchi, Pedro Dumlao, Bernabe Hernandez, Domingo Guigui, Ushinosuke Kondo, Teruichi Kubo, Masaiki Oato, Simon Cumlat, Apolonio Lazo, Giichi Hamamoto, Dionicio Carrit, Seraphine Robello, Toshio Tanaka, Barney Faria, Fumio Sunahara, Hirosaku Takata, Kiichi Yamada, Alfred Reyher, Masaru Ezawa, Damaso Claunan, Antone Robello, Manuel Damas, Keichi Kamiyama, Yoshiji Yamada, Edwin Mori, Genjiro Hironaka, Jiro Sakai, Margaret Fujiwara, Louis Pacheco, Yukishige Tsutsui, Yack Chun Lee, Eiko Sakaguchi, Moses Fernandez and Toshio Kashiwabara, Defendants herein, by and through their Attorney, Richard Gladstein, in Civil Action No. 787, filed in the above entitled Court on April 9, 1947, that competent witnesses called on behalf of the Plaintiff and the Defendants above named would testify as follows:

### Part I.

## DESCRIPTION OF THE PLANTATION AND ITS OPERATIONS

### 1.

#### Name and Location of Company

Waialua Agricultural Company, Limited, hereinafter sometimes referred to as the "Plantation,"<sup>1</sup>

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<sup>1</sup> The term "Plantation" is also used in this stipulation to mean the geographical area on which the Waialua Agricultural Company, Limited, is producing sugar cane, processing it into raw sugar and conducting related operations.

is a corporation duly organized and existing under and by virtue of the laws of the Territory of Hawaiia, having been organized in 1898, with [118] its head office located in Honolulu, City and County of Honolulu, Territory of Hawaii, and its plantation located in the District of Waialua, City and County of Honolulu, Territory of Hawaii.

2.

The Business of the Plantation

Since the original incorporation of the Company in 1898, the business of the Plantation has been and continues to be the growing, cultivating and harvesting of sugar cane on lands owned or leased by the Plantation; the processing of such sugar cane into raw sugar and molasses; the bagging, loading and shipping of the raw sugar to refineries situated in the continental United States; and the loading and shipping of molasses in bulk to continental United States, all of which is hereinafter described. The loading of the bagged raw sugar and of the molasses into railroad box and tank cars of the Oahu Railway & Land Company, an independently owned and operated carrier (hereinafter referred to as the "O. R. & L."), at the site of the mill<sup>2</sup> and the pushingg of such cars from such

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<sup>2</sup>The term "mill" as used herein means the building and equipment of the plantation used in the actual processing of sugar cane into raw sugar, including cane carrier, cane cleaning plant and scales, crushing plant, boiling house, fire room, power plant, sugar warehouse, and molasses tanks, and all equipment therein.

site onto a nearby spur of the O. R. & L., complete the operations of the Plantation and the work of its employees relative thereto. The Plantation does not engage in any sugar refining operation.

### 3.

#### Relative Position of Plantation in Territory

The Waialua Agricultural Company, Limited, is one of thirty-four (34) sugar plantations located, operating and [119] doing business in the Territory of Hawaii (hereinafter referred to as the "Territory"). The total raw sugar produced by these thirty-four plantations in 1945 was 821,216 tons. Of this amount the Waialua Agricultural Company, Limited, produced 56,193 tons or slightly less than 7%, and as such it ranked as the third largest producer of raw sugar in the Territory in 1945. The total number of employees of the thirty-four plantations as of September 1, 1946, was 29,517 and was approximately 28% of the total number of persons privately employed in the Territory. The raising of sugar cane and the processing of it into raw sugar constitutes the principal industry in the Territory in terms of the number of persons privately employed, invested capital and the value of the product produced. Between the years 1941 and 1945, the Territory produced between 13.30% and 10.76% of all sugar, both beet and cane, distributed for consumption in the continental United States.

## 4.

Sugar Cane Not an Article of  
Interstate Commerce

Sugar cane is highly perishable, as will be hereinafter described, and starts to deteriorate immediately after harvesting. To avoid serious losses it must be processed into sugar, syrup or molasses within a few hours after it has been burned<sup>3</sup> or severed from the ground. For this reason and because of the great weight and bulkiness of cane as compared with raw sugar, it must be processed within a few miles of where it is grown. Sugar cane [120] never moves into interstate commerce in its natural state. Except for small amounts which are used as seed cane, it is grown exclusively for the purpose of producing sugar, syrup or molasses and it is these end products, which are the result of the processing of cane, which becomes articles of interstate commerce.

## 5,

## Some General Facts About the Plantation

At the present time the Plantation grows and produces sugar cane on 9,663 acres of land owned or leased by it. Substantially all of the land now devoted to sugar cane production has been owned or leased by the Plantation and used by it for this purpose since 1910. The table set forth on page

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<sup>3</sup> The references herein to the "burning" of sugar cane are to the burning of the leaves and rubbish in the cane field as part of the harvesting operation. In such burning the cane stalks are undamaged.



73 of this stipulation will show that the number of acres under cane cultivation since 1910 fluctuated above and below the present cane acreage by approximately 10%. The acreage reduction shown for 1935 was due to the establishment of quotas by the Federal Government under the authority of the Agricultural Adjustment Act of 1933, 7 USCA § 601 et seq., but the acreage eliminated from cultivation at that time was eliminated on a temporary basis only, and continued as a part of the plantation and was subsequently replanted. In 1915 and 1920 the acreage exceeded present acreage by some 10%. This was due to the fact that the Plantation was at that time attempting to produce cane on certain of its marginal areas, the use of which for such purpose was later abandoned. The cane growing land of the Plantation, its buildings and yard area, and other lands owned or leased by the Plantation, but unsuited for cane growing, including a wooded area from which firewood is cut for use as fuel by plantation employees living in the plantation villages hereinafter described, form a contiguous and compact area as shown by Exhibit "A" which is attached hereto and made a part hereof, except that an area of 470.42 acres of cane growing land located on the lowlands at the west end of the Plantation is connected with the principal area of the Plantation only by a strip of land 40 feet wide and 1,150 feet long over which the Plantation has a perpetual easement for rights-of-

way for the moving of its agricultural equipment supplies and sugar cane.

Sugar cane is grown in fields which in one area of the plantation are cut by deep gulches and waste land unsuited for cane production, while in other areas the fields are separated only by plantation roads or public highways. Cane growing land is crisscrossed with a network of plantation field roads and a narrow gauge plantation-owned railroad. Planting, cultivating and harvesting supplies, materials and equipment are transported over these field roads. The railroad is used to transport cane from the fields to the mill and to transport some agricultural supplies and harvesting equipment between the plantation buildings and yard area and the fields. There is also a network of irrigation ditches throughout the plantation and a number of water storage reservoirs, since all cane grown on the plantation must be irrigated.

All the lands devoted to the growing of sugar cane are managed and operated by the Plantation as an integrated farming unit and single enterprise with identical cropping, cultivation and harvesting practices, and with the same labor and equipment. Employees work in the fields moving from one area to another depending upon the program of plowing, planting, irrigating, fertilizing, applying herbicides and insecticides, weeding and harvesting. The cane lands are in various stages of production or preparation. Some acreage is being [122] plowed and furrowed for new planting, some is being "ra-

tooned'' (a process hereinafter described), some acreage is in young growth, some in old growth nearing maturity and other acreage is being harvested. The growing, harvesting and processing of the cane and the marketing of the raw sugar constitute one continuous and year around operation except that annually harvesting and processing of cane are suspended for approximately three (3) months for the purpose of reconditioning the mill and equipment, as hereinafter described.

As of September 1, 1946, the Plantation had a total of 1,144 employees. The Plantation considers this number of employees sufficient for its operations as conducted at the present time. Its labor requirements are substantially the same throughout the year.

The Plantation has ten (10) job classifications for its rank and file or non-supervisory employees, who numbered 959 as of November 19, 1946. The hourly wage rates for such ten (10) classifications range from a minimum of 80c to a maximum of \$1.38. The Plantation, however, employs 12 handicapped, superannuated and part-time workers who receive a minimum hourly wage of 74c. The weighted average hourly wage rate for all non-supervisory employees of the Plantation is 90.8c. The existing collective bargaining agreement dated November 19, 1946, between the Plantation and the International Longshoremen's and Warehousemen's Union, Local 145-7, as collective bargaining agent for most of the non-supervisory employees,

which contract sets forth the wages, hours and working conditions of the employees herein involved, is attached hereto as Exhibit "B" and made a part hereof. [123]

Prior to March 1, 1940, the Plantation paid no overtime compensation but since that date it has paid time and one-half for all hours worked in excess of eight in one day and forty-eight in one work week. Work performed on New Year's Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day have also been compensated at the rate of time and one-half since March 1, 1940.

On July 12, 1943, most of the office staff and most of the warehouse employees were placed on a 40-hour work week schedule and have continued since that date on such schedules with time and one-half being paid for all hours worked in excess of forty per week.

Since October 4, 1943, employees in the mill and in the allied service shops have been paid time and one-half during the off season for all hours worked in excess of forty per week.

It is the contention of the plaintiff that the provisions of the Fair Labor Standards Act do not require it to pay any of its employees overtime compensation. Conversely, it is the contention of the defendants that such Act requires the plaintiff to pay all of its employees time and one-half for all hours worked in excess of forty per week.

All Plantation operations and activities are under the over-all direction and control of the

Plantation manager. Under him as immediate assistants are the assistant manager [124] and three staff assistants, the field and mill coordinator, and the personnel training and development director.

The various plantation operations described hereinafter are each under the supervision of a manager or superintendent as follows: Field operations, the field superintendent; mill and allied shop operations, the cane processing superintendent; warehouse, the warehouse superintendent; construction, the construction superintendent; accounting, the office manager; and civil engineering, the civil engineer. All of these superintendents are responsible to the plantation manager.

## 6.

### Location of Buildings and Facilities on Plantation

The plantation buildings, including the mill, which processes the cane into raw sugar, a number of buildings housing repair shops for the maintenance of field, transportation and mill equipment, warehouses for plantation supplies, and other buildings having functional relation to the entire plantation operations, are centrally located on the lowlands of the plantation in a small, compact and contiguous area. The administration offices of the Plantation are located on the plantation within a distance of not more than one-fourth ( $\frac{1}{4}$ ) of a mile from the other buildings. Surrounding such plantation buildings and administration office area are



plantation-owned houses in which employees working in both field and mill live with their families. Community service establishments and recreational facilities are also located here. Public highways and an independently owned narrow gauge railroad cut across this area. Other company-owned facilities include a hospital and a general merchandise retail store which sells to both plantation employees and the general [125] public. Located along the public highways running through the plantation are non-plantation-owned stores, shops, theatres, automotive service stations, barber shops, churches, a bank and other facilities which are normally a part of any typical small community in a farming area. See Exhibit "A" which illustrates the general description given above of the location of the cultivated areas, gulches, waste lands, buildings, plantation and private communities and highways.

## 7.

### Preparation of Land for Planting

Sugar cane is a giant bunch-grass producing clumps or stools of solid strongly jointed stalks or sticks measuring from 1 inch to 2½ inches in diameter, well developed stalks reaching on an average 10 feet to 15 feet in height. The sugar cane grown on the plantation requires generally 22 to 24 months to mature after planting or "ratooning." Three or four crops can be obtained from each planting, fields being replanted each six to eight years. Between these times of planting a field is "ratooned"

at the end of each harvest. Seed used for planting is actually 24-inch to 30-inch young cane cuttings. These cuttings of cane have nodes every 5 inches to 8 inches apart. At every node there is a bud which forms a new stool. Planting seed is obtained from cane that is eight to twelve months old.

Plowing of the field for the planting of new crops commences soon after the harvesting operations on the previous crop are completed. The plowing is performed with 110-horsepower diesel powered tractors with rooter type subsoil attachment. The subsoil is broken up to a depth of 18 inches to 24 inches. Two or more subsoil plowings of each field are carried out, the second plowing being performed at right angles to the first. After the field has been subsoil plowed twice, a [126] disc plow (eight 28-inch discs) is drawn by a tractor over the field breaking up large cane stools and lumps and turning over the soil. When this operation is completed, the subsoil tractor subsoils the field once again and the final plowing is completed with the disc plow. This leaves the field well broken up and ready for the planting operation. Each type of plow used in the above operation is manned by a tractor operator and helper. Tractors may be operated in two shifts or one shift may work longer than the customary eight hours depending upon the urgency of completion of the plowing operation.

After the field is plowed, a crew of six men including a tractor operator using a tractor with a "stone boat" attachment, clears the field of obstruc-

tions, such as stones. This same crew and tractor are also used to move concrete irrigation flumes and pipes to the proper location, if the locations are to be changed.

## 8.

Planting is done by a planter machine mounted on a 75-horsepower diesel powered tractor manned by a crew of eight men including the tractor operator. This planter consists of a platform which will hold sixty to seventy-five bags of seed weighing sixty-five to ninety pounds each. The bagged seed is spotted in the field prior to planting and is loaded onto the planter by the planting machine crew. A fertilizer hopper is also mounted on the tractor, and fertilizer is distributed concurrently with the planting. The planter progresses across the field and two mold boards attached to the tractor draw-bar make two "V" shaped furrows from fourteen to eighteen inches deep. The seed is guided [127] by chutes from the platform of the planter to the furrows; fertilizer is distributed in the furrows from the fertilizer hopper. The planting machine plants about one acre per load. After the planter drops the seed and fertilizer, a gang consisting of ten to fifteen men with hoes follows the planter spacing the seed and covering it with an inch or two of soil. A flume laying gang, consisting of fifteen men under the supervision of a flume laying foreman, then proceeds to install concrete flumes. These flumes are spotted throughout the field having been brought up by truck from the plantation

concrete products plant where they are made. Sections of concrete flumes are from 30 inches to 36 inches long and are approximately 15½ inches wide at the top. A small crew of eight men construct necessary headings, which are special wood or concrete flume headings or gates required at the point at which water is brought into the field. Field irrigation lines are carefully plotted out according to prearranged plan and method which will be described hereafter. As soon as possible after the seed is planted, irrigation water is applied.

Approximately six weeks after the planting has been completed and the crop has commenced to grow, further planting is performed to the extent of filling in any blank spots where the cane seed has failed to germinate. The seed is hauled by truck to the edge of the fields and then spotted throughout the field by pack mules. This work is done by a pack mule man, with a helper. Holes are dug by hand hoe, and seed pieces are then laid in these holes by hand and covered to a depth of two inches. A gang of approximately twenty-four employees perform this work.

## 9.

### Ratooning

As previously stated, fields are replanted each six or eight years. Between these times of planting a field is "ratooned" at the end of each harvest. "Ratooning" is a term referring to the operations performed after a field is harvested to prepare the field for the growing of another crop. In such prep-

aration of the old cane stools or stubble are left in place and the ground is refurrowed into rows. The undamaged cane stools or stubble will then send up new shoots upon application of water and fertilizer to the field. New seed is added to fill in blank spots or to replace damaged stools or stubble.

## 10.

### Cultivation

To control weeds, herbicides are applied. The first application is performed within one week after planting in order to destroy the first germination of the weeds. Thereafter herbicides are applied at intervals varying from fifteen to twenty days depending on the weather and the condition of the field. The last application is performed when the cane is approximately six months old. Thereafter spraying of herbicides is limited to the spraying of irrigation flume areas, for a distance of ten to fifteen feet on either side of the flume, and also spraying of the area along the main ditches and the level ditches within such particular field area.

Herbicide gangs are composed of thirteen to nineteen men. Each man in the gang is equipped with a knapsack sprayer; that is, a sprayer which is strapped to the backs of the men, the herbicide being applied by means of a nozzle at the end of a hose which is directed by hand as the gang members walk along the areas being treated.

After two or three applications of the herbicides, a weeding gang composed of fifteen to twenty-five men remove the remaining weeds with the use of hoes. A gasoline driven tractor equipped with two



revolving discs at either side of the cane stool is sometimes used. The tractor cuts the weeds and throws them to the top of the banks between the rows of planted cane.

Truck sprayers of herbicides are employed to control weed growth on plantation field roads and along storm ditches and main irrigation ditches. This operation utilizes a truck which carries a tank of 1,000-gallon capacity and a special spray pump which pumps the herbicide through a hose pipe equipped with a spray nozzle. One man then guides the nozzle along the road sides and ditches.

Although insecticides are occasionally called for, their application is infrequent. When performed, the method used is a similar knapsack spraying, applying the insecticides to the top of the cane. Herbicide gangs perform this operation also.

A total of approximately forty men is engaged in herbicide operations.

## 11.

### Fertilizing

After planting there are two or three additional applications of fertilizer before the cane reaches the age of seven months. The fertilizer is hauled by truck to the edge of the field or nearest point of distribution and then reloaded on pack mules, which place bags alongside the irrigation flumes or level ditches according to the number of pounds to be applied per acre. Each man in the fertilizer gang, numbering twelve men, is equipped with a bag which he fills with fertilizer and then proceeds along the cane rows applying [130] the same by hand near the base of the cane stools.

Irrigation water is also used to apply fertilizer to the field after the cane is too high to permit hand application. Normally, two applications of fertilizer are applied by water.

Fertilizer applied for the year 1945 totaled 2,855 tons.

## 12.

### Irrigation

Intensive irrigation throughout the year is required for the entire plantation acreage devoted to sugar cane production. Although the normal annual rainfall is about thirty inches, precipitation is unevenly distributed throughout the year, thereby requiring supplemental irrigation at all times.

An extensive and comprehensive system of water supply from surface and artesian sources has been developed by the Plantation since it was incorporated in 1898. The primary source of surface water is the Wahiawa Reservoir, constructed and developed in 1904-06 and operated by another company. This reservoir has a storage capacity of 2,540 million gallons, obtained from a mountain watershed. Water from this reservoir is conveyed through four miles of tunnel and open ditch to the 750-foot contour of the Plantation where it is conveyed through a major canal forming in general the upper boundary of the cultivated area.

Surface water is diverted by small dams at the headwaters of the streams running down the gulches indicated as wasteland on the map marked Exhibit "C" which is attached hereto and made a

part hereof. Flow from the streams in these gulches is sporadic and reservoir capacity to store freshet peaks is limited.

In addition to the above sources of water, a system [131] of deep well pumps has been developed gradually on the Plantation since 1898 to tap the artesian slopes from the two mountain ranges lying on either side of the Plantation. The present pump system comprises twenty-two pumping stations with a rated capacity of 111.36 million gallons per 24-hour day. Three of these units are powered by steam; the remainder are operated by push-button controlled electric power units.

In addition to supplying irrigation water for sugar cane production, the artesian system supplies the mill and the domestic water needs of the plantation villages. Occasionally, water from artesian wells is also supplied to home gardens of plantation employees and to small farmers, all of whose produce is consumed locally. Artesian water may also be used for fire protection purposes. Surface flow water may be used, however, for home gardens, as well as for fire protection needs.

The following table summarizes the amount of water received from various sources during the years 1941-1945, and reflects the amounts of these totals which have been required for irrigation purposes:

	(In millions of gallons)					
	1940	1941	1942	1943	1944	1945
Steam Pumps.....	4,186.93	5,082.49	3,059.50	4,250.56	5,842.23	6,495.03
Electric Pumps.....	12,183.16	12,347.43	7,747.88	8,445.01	12,601.78	11,979.92
Total Pump Water.....	16,370.09	17,900.47	10,807.38	12,695.57	18,444.01	18,474.95
Wahiawa Res.....	9,835.10	7,508.97	8,835.71	9,366.64	8,000.40	6,539.75
Helemano Stream.....	1,874.82	1,710.95	2,306.17	1,698.47	1,820.14	1,023.05
Opaeula Stream.....	1,926.33	2,138.21	1,979.71	1,855.05	1,590.53	1,014.43
Kamananui Stream.....	1,235.88	1,140.51	1,852.34	1,193.41	567.35	229.58
Total Surface Water.....	14,945.83	12,541.40	15,069.35	14,182.48	12,028.95	8,806.81
Total Water Received.....	31,315.92	30,441.87	25,876.73	26,878.05	30,472.96	27,265.26
Total Water Used for Cane Irrigation.....	30,547.71	29,895.84	24,665.12	26,002.83	29,658.02	26,506.95

A flexible system of earth, concrete and stone-lined canals, steel inverted siphons, and concrete pipes and flumes distributes water to the cane fields of the Plantation. Approximately 50 per cent of the cultivated land of the plantation is irrigated solely by surface water; approximately 5 per cent is irrigated solely by artesian water; and the balance is irrigated by both surface and artesian water.

The plantation is traversed by three main supply canals. The Wahiawa Ditch at the upper boundary of the cultivated area follows approximately the 750-foot contour and delivers gravity water from the Wahiawa Reservoir, supplemented by flows from the other stream diversions. A group of canals at approximately the 300-foot contour receive and distribute water from high-lift pump units, and a third group of canals along the 100-foot contour deliver low-lift pump water. A few low-lift pumps supply artesian water directly to certain areas through separate ditch systems.

In practically all cases, water is delivered from each source to several areas of the plantation across deep ravines and rugged topography which necessitate the use of long inverted steel siphons of 24 to 54-inch diameter or of high flumes. Lateral distribution from each canal is provided by "straight ditches," usually lined with stone or concrete to prevent erosion, through which water is delivered to the fields or to the next lower canal in the system. Distribution reservoirs, of which 30 ranging in capacity from 1.0 to 50. million gallons, have been



constructed by the Plantation provide night storage and equalize water flows.

One of two methods of irrigation is employed depending upon the topography. On flat lands with a slope of two [133] feet or less to each hundred feet, the field is in furrows running down the slope. Low level ditches extend across the fields at right angles to the furrows. Water flows from the field supply ditches into the level ditches which are spaced approximately 200 to 300 feet down the slope, and the irrigator diverts water into the cane furrows, either by cutting through the banks of the level ditches with a hoe or by using controlled gates on permanent pipes connecting with each furrow. The method described is referred to as the "Long Line" method.

Another method used is the "Herringbone" method. If the field slope is in excess of two feet per one hundred feet, the concrete flumes previously mentioned are laid along the ridges or highlands. The field slope may be as high as 10 or 12 feet per one hundred feet. Openings cast in the sides of the walls at the time of making are spaced so that these openings are opposite the head of each furrow. The furrows run across the field at a moderate grade. The irrigator adjusts the flow of water through the holes in the concrete flume with the use of a metal scoop placed in the flume. These scoops are made in the plantation tinsmith shop for this purpose.

Four water supply ditchmen are responsible for the inspection, maintenance and control of the upper reservoirs and intake dams. Twelve water distribution ditchmen are responsible for receiving the irri-

gation water at the main canals and distributing it to the field irrigators. During periods when irrigation is suspended, both the water supply ditchmen and the water distribution ditchmen are engaged in maintenance, cleaning and minor repairs to the ditch and reservoir systems. At present, 105 employees are engaged in field irrigation and incidental cultivation of specific fields. These field irrigators receive water from the field supply ditch or one of [134] the main canals and distribute it according to one or the other of the two methods described above.

The entire irrigation system of the Plantation is located on lands owned or leased by the Plantation and constituting a part of the integrated farming unit. The location of the principal plantation irrigation channels, canals, reservoirs and pumps is shown on Exhibit "C".

The frequency of irrigation applications varies slightly during the year, depending greatly on natural rainfall received and to a lesser extent on the temperature and amount of sunlight. The dominant factor in determining the frequency of irrigation is the age of cane and the consequent spread of the root system and the exposed leaf mass. The mass of stalks and leaves offer great resistance to the flow of irrigation water at the base of the plant, thereby requiring heavy applications of water. A general schedule of irrigation frequency, for periods without rainfall in excess of 0.50 inch, at the Plantation is:

Cane from 0 to 1 month old: Irrigate every 7 to 10 days.

Cane from 1 to 6 months old: Irrigate every 12 days.

Cane from 6 to 12 months old: Irrigate every 15 days.

Cane from 12 to 18 months old: Irrigate every 18 days.

Cane from 18 months to maturity: Irrigate every 20-25 days.

Cease irrigation from one to three months before harvest.

Irrigation frequency at the Plantation is guided by soil moisture samples collected weekly from each field of the Plantation. The field capacity of each soil type has been determined by standards developed by the U. S. Department of Agriculture, and the soil moisture available to the plant is reported for each locality in terms of acre inches of water available and the number of days interval required to replenish the supply. [135]

For the crop years 1933-1945 inclusive, the ratio of sugar produced to million gallons of water used for irrigation at the Plantation was as follows:

Crop Year	Tons Sugar Produced	Million Gallons Water Applied	Tons Sugar Per M.G. Water
1933	55,473	29,588	1.87
1934	55,669	31,454	1.77
1935	50,580	25,554	1.98
1936	53,855	29,068	1.85
1937	52,957	29,085	1.82
1938	46,853	29,478	1.59
1939	53,879	30,509	1.77
1940	58,212	30,548	1.90
1941	58,410	29,896	1.95
1942	52,967	24,665	2.15
1943	51,875	26,003	1.99
1944	54,684	29,658	1.84
1945	56,193	26,507	2.12

From 1899 to 1941, inclusive, tons sugars are commercial; from 1942, tons sugar are 96° U. S. Department of Agriculture.

## 13.

## Harvesting

Harvesting is programmed at least one or two years in advance and the order of harvesting the various fields determined. In order to assure a continuous and balanced flow of cane to the mill, harvesting schedules must be properly balanced with planting and ratooning of succeeding crops, irrigation water distribution and the capacity of transportation facilities. In this way the harvesting, planting, ratooning, irrigating, transporting and milling operations can be evenly coordinated. Harvesting operations are conducted throughout the year except during the so-called "off-season"—a period of approximately three months when the mill is closed down for repairs as will hereinafter be described. Before any harvesting operations commence, field maps are prepared and the entire harvesting operation is planned out in every detail.

Sugar cane fields ready for harvesting are first burned over. Experience has shown that burning of the sugar cane results in insignificant losses in sugar content while efficiency in harvesting is greatly increased not only in removing the cane from the fields, but also through reduction of the amount of trash carried to the mill. Efficiency in operation of the transportation system as well as in the operation and maintenance of the mill is thereby effected. Trash percentage may run as high as 50 to 60 per cent in harvesting unburned cane, but in harvesting burned cane, trash percentage averages only 13 to

20 per cent. Trash is the term applied to anything other than millable cane, and includes dead cane, soil, foliage, cane stools, stones, tramp iron or any other foreign matter gathered up and sent to the mill in the course of harvesting operations.

An average of 10 to 15 acres of cane is burned at one time. Firebreaks approximately 15 feet wide are cut through the unburned cane by a modified 75-horsepower tractor bulldozer referred to as a bulldozer rake. This machine has a series of nine heavy steel teeth extending out in front of the machine and tears the cane stalks from the stools and pushes the cane off to the side into the upright cane. It requires one operator. A ground crew of four men work with the rake cutting cane stalks missed by the rake and also removing obstructions in the preparation of firebreaks. They also clear areas around telephone and power line poles, fences and pump houses for proper fire protection during cane burning. This crew also aids the rake operator in making minor repairs on the machine.

After the firebreaks are completed, a crew of six men proceeds under the field supervisor to set fires along the firebreaks. Backfire is a common practice as a safety measure. Burning of the cane may be performed at any time [137] during the day, including early mornings or late evenings depending upon the winds and weather conditions. The six-men crew performing this work is commonly referred to as the "burn cane crew". Four of the men in this crew make up the rake crew referred to above.



After the cane is burned, this rake and the four ground crewmen open up lines through the burned cane for the laying of portable track over which empty cane cars can be hauled from the main line of the Plantation railroad on a siding thereof into the field for loading and full cars can be hauled out of the field, to the main line for transportation to mill. A portable track plow or leveler then follows through the lines opened in the burned areas by the rake to make proper beds for the portable track. This equipment consists of two rails welded together to a point, then spreading out into a large trowel-shaped attachment mounted on the front of a 30-horsepower caterpillar tractor. A rail drag consisting of a number of rails welded together in a rectangular form 9 feet by 6 feet and attached by a chain to the rear of a tractor is pulled along the track lines for further leveling. The plow is used to break up the packed soil while the drag is used to fill or drag out excess soil. Ditches and holes are filled in. This portable track leveler is manned by one tractor operator. When the tractor is not required, the tractor operator leaves his machine and performs work, as required, with the portable track crew.

When the portable track beds have been prepared, rail cars loaded with sections of portable track are then drawn into the field by tractors. The portable track lifting machines lift the track sections from the loaded cars and place them in approximate position on the track bed. A crew [138] of three men follows, and, with the aid of a pinch bar, draw the

sections together, placing shoes on the connecting joints, flush end to end.

After the portable track line has been laid from the main line into the field, empty cars are hauled into position for loading. The number of cars needed for each portable track line is determined by the estimated tonnages of cane on the ground. If the cane tonnage is light, or cane is being picked up after the first loading, the cars are spaced to carry an average weight. If the tonnage is heavy, the cars are left coupled up the full length of such track line.

Where the main line passes through the field or is adjacent to the field the main line is utilized as a field track, harvested cane being loaded directly into cane cars spotted on the main line track.

The cane is loaded on the cars by caneloading machines. These machines are caterpillar cranes weighing approximately 23 tons equipped with a 40-foot boom and a finger-like grab which pulls or grabs the cane loose from its growing position and loads it directly into rail cars. The machine is operated by a 65-horsepower diesel engine. The cane grab operated by heavy steel cables consists of a number of tines capable of lifting approximately one to two tons of cane at one time. The machine moves on its caterpillar treads parallel with the portable track lines on which the cane cars have been placed. The Plantation owns seven of these caneloading machines. Three caneloading machines are normally assigned to each harvesting operation, there usually being two harvesting operations being

performed on the plantation simultaneously; the remaining machine acts as a spare. Each machine has one operator and four ground crewmen for each of two 8-hour operating shifts per day. The four ground crewmen for each [139] caneloading machine cut cane stubble and stack up loose cane falling from the grab. They give guiding signals to the operator, remove obstructions from the path of the machines and assist in minor repairs to the machine itself. The loading machine is sometimes called upon to assist in placing wrecked cars back on the field or main line tracks, and in such cases the ground crew constitutes the wrecking crew working with the operator. A service unit of one operator and a helper service all equipment each day. Lunch periods of the loading machine crews are staggered to permit servicing by the service unit without delaying the operation. Cane which is located in field corners, along fences, under transmission lines or which is otherwise difficult or impossible to reach with the cane loading machine, is bulldozed into reachable piles by the rake and subsequently loaded into cars by the caneloading machine.

The caneloading machines are equipped with generator units supplying power for the operation of floodlights on the boom and the cab. The entire machine and the ground surface around the machine have sufficient light so that the efficiency of the night loading operations is equivalent to that of day loading.

During the interim period between the termination of the day shift work and the beginning of the

night shift, service and repair men complete necessary repairs. During this time also the haul cane men, hereafter described, are able to remove the balance of the loaded cane cars out of the field, thereby permitting the locomotives to clear the side tracks and bring up empty cars for the night loading operations.

After cars are loaded by a cane loading machine, they are hauled from the field to the main line of the railroad (at the edge of the field) by tractors. Employees handling [140] this operation are called the haul cane crew. Preparatory to the movement of the loaded cane cars, one man or more of the haul cane crew using a cane knife cuts off some overlapping or protruding cane. Two haul cane tractors then move into position. One tractor is coupled directly to the rear car, enabling the operator to push or hold back the entire string of cars as required by the gradient of the track. The second tractor couples up alongside the cars in the front half of the string by means of a cable and is also in position to push or to hold back the cars. The ground crew then mans the brakes on the cars, releasing them to start loaded cars rolling, and thereafter releasing and applying brakes as required to eliminate full load weights on the tractors.

Carloads average 4.75 tons per car gross cane. Cane trains may consist of as many as eighty to ninety cars, depending upon the grade or the steepness of the field. Cane trains average sixty cars. Movement of field loads are supervised by the haul cane supervisor and the supervisor in charge of the

field, one taking charge of the front and the other the rear portion or half of the train load. They signal the hand brake operators and the tractor operators. The steady crew for this operation consists of the haul cane supervisor, two tractor operators and three brakemen on the day shift, with one tractor operator and two brakemen on the night shift. Tractors equipped with lights move empty cars into position for the night loading with the assistance of the brakemen.

A pickup crew consisting of two supervisors, two tractor operators, and twelve to sixteen ground crew men pick up all cane pieces along the track, throwing the cane into carts drawn by tractors. Full carts are dumped near the [141] loading machines. The crew also handcuts and loads cane from such parts of the field as the loading machine and bulldozer do not reach. When field pickup is completed they serve as ground crew men for a small diesel locomotive which tows empty cane cars along the main line from the field to the mill, picking up fallen cane. After the loading machines leave the harvested field, this crew cleans up remaining cane loading it into cane cars pulled by a tractor. The crew also serves as a general utility gang acting as replacements for other gangs or crews.

#### 14.

#### Railroad Transportation

From the time the Plantation was organized, and continuing to the present, the Plantation has owned



and operated a narrow gauge railroad system. This railroad system is constructed, located and operated exclusively on the plantation. It hauls no cane or freight for anyone other than the Plantation. It is used predominantly by the Plantation for the purpose of hauling sugar cane from the fields of the plantation to the plantation mill. (Cane burned by accidental fires is sometimes hauled to the mill by truck if the tonnage is small.) It is also used to a much lesser extent to haul portable rails and other agricultural supplies and equipment from the plantation warehouses and shop yards to and from the fields. However, most of this latter type of hauling is handled by the plantation trucks operating over plantation field roads and also public roads.

The plantation railroad is also used for one other purpose at the present time. The Plantation has a spur track of approximately 3,000 feet in length running from its mill and warehouses and connecting with the railroad line of the O. R. & L. This spur track is used by the Plantation to deliver box [142] and tank cars loaded with sugar and molasses to the O. R. & L. and to receive incoming plantation supplies delivered to the Plantation by the O. R. & L. The O. R. & L. is now in a state of liquidation and will discontinue its operations during 1947. Thereafter the outgoing and incoming freight of the Plantation will be handled by an independently owned and operated trucking company.

Attached hereto and made a part hereof is a map

marked Exhibit "D" showing the location of the railroad lines composing the railroad network extending over the plantation. This railroad network consists of fifty-six miles of main line track and nine and thirty-four hundredths miles of portable track. Portable track laid in the fields is not shown on the map since it is installed only during the harvesting period and is then removed when harvesting is completed. Also omitted is a total of approximately twelve and one-half miles of line which is not permanent inasmuch as it is laid either bi-annually or annually on plantation roads.

Portable track laid in the field for harvesting operations lacks proper roadbed for the locomotives. The primary reason for the use of the portable track for harvesting is that permanent track cannot be laid in the fields because of interference which would otherwise result in planting and cultivating operations. During the short periods when such track in the fields is in use it is an integral part of the railroad system over which cane cars move directly from the fields to the mill.

The plantation railroad equipment is as follows: Six 25-ton steam locomotives, one 17-ton steam locomotive, one 12-ton steam locomotive, one 12-ton gasoline locomotive and one 14-ton diesel locomotive; two hundred steel cane [143] cars, measuring approximately 11 feet by 6 feet by 5 feet, and five hundred and twelve wooden cane cars measuring approximately 10 feet by 6 feet by 5 feet.

Main line switches to portable track, a few of

which are permanent, are installed at predetermined locations along the main line for movement of empty cane cars into the fields to be harvested and return of the loaded cars. The number of switches used per field depends on the proximity of the field to the main line, its size, shape and terrain.

Empty cane cars are moved into the harvesting fields as much as possible at night with the night shifts of railroad crews. This allows the night harvesting field crews to spot empties for night and day loading operations free from interferences of outgoing traffic. Only as time and traffic permit there is available room in the field, to meet a field exigency, or to meet demands of the mill for additional cane are empty cars moved into the harvesting fields during the daylight hours. Loaded cane cars are hauled from the field to a main line track by tractors and thence to the mill by steam or diesel locomotives during daylight hours only. On the return from the mill available empty cars are moved to some point near the harvesting field. In this manner flow of traffic in and out of the harvesting fields is primarily one-way traffic.

Empty cane cars are often pushed by the locomotives directly onto the portable track. Locomotives do not go onto the portable track, only to the field switch.

Loaded cane cars are moved part way onto the main line. The cars may be stationary or may be moving at the time connection to the locomotive is

made. At places where a siding is convenient, the loaded cars may be moved onto the siding by field tractors. [144]

Movement of trains to and from the mill is accomplished with a train crew of four men consisting of an engine driver, fireman, front and rear brakemen. Six to nine crews, with an average of seven, depending upon harvesting field locations, are required daily to handle cane and incoming and outgoing freight. The yard engine, which operates during the day only, handles the incoming and outgoing freight, and assists with spotting and segregating incoming cane cars. Maintenance of a steady flow of cane cars to the mill is also the responsibility of a yard crew.

A crew of a diesel engine locomotive driver and one man sprays the railroad rights-of-way with a herbicide approximately every two weeks. The operation requires four days.

Employees known as section men maintain the main line trackage and keep it in good repair.

Picking up of cane spilled along the railroad rights-of-way requires two to three days per week with one locomotive and an average of twenty cars. The Pickup crew consists of locomotive driver and one brakeman (diesel locomotive is used) together with a crew of pickup men from the field of between six and twelve men.

One hostler and one engine wiper wash the locomotives and steam boilers, oil and grease the loco-

motives, fire the steam locomotives preparatory to the day's operations and assist in minor repairs to locomotives. This service work is performed in the plantation roundhouse.

Ten crossing watchmen are used to protect the public at government road crossings. Between the hours of 10:00 p.m. and 6:00 a.m., train crews are responsible for flagging all government road crossings. One man is used to dry and [145] maintain a supply of dry sand for use by the locomotives. Another man is employed to keep the mill yard rights-of-way clean.

During the off season when cane is not being harvested, the section men are used in the repair and maintenance of main line trackage supplemented by approximately twelve brakemen and five firemen. Watchmen are used for cleaning and weeding the rights-of-way. Usually one engine driver, two firemen and three brakemen are assigned to assist the electricians on mill work primarily. One fireman and two brakemen are generally assigned to the welding shop for assisting in off season factory repairs and installation of new equipment. Two more brakemen are sometimes assigned to boiling house repair work. One yard engine crew is maintained during the off season. The crew consists of engine driver and brakemen for the diesel locomotive. Engine drivers, not otherwise used, assist in locomotive repairs.



## 15.

## Field Road and Public Road Transportation

The size of the plantation has necessitated the construction and maintenance by the Plantation of a network of field roads for the transportation of labor, field supplies and equipment throughout the plantation.

This network of roads is shown on the transportation map marked Exhibit "D." The main roads, as shown on this Exhibit, are publicly owned roads, paved and maintained by the City and County of Honolulu, or by the Territory of Hawaii.

Most Plantation-owned roads are dirt surface roads, maintained by the Plantation with its own diesel powered grader. A few roads have a top dressing of either sand, coral or crushed rock. Some Plantation-owned roads are paved. [146]

These roads are used to transport plantation labor from the main plantation village situated around the plantation buildings and yard area out to the fields. Cement and other supplies are loaded hauled from outlying villages to various fields. All this labor is hauled by truck.

Field supplies, such as concrete irrigation flumes, irrigation flume putty, fertilizer, cement, etc., are hauled from the plantation warehouses and yard area out to the various fields by 1½-ton to 7½-ton gasoline driven trucks. At times the plantation railroad may be used to haul some of the above supplies, especially when certain parts of the fields

are more easily reached by railroad. Most of the time the fertilizer is loaded by hand directly from O. R. & L. box cars onto trucks and then hauled to the fields. Cement and other supplies are loaded from warehouses by hand onto trucks. Concrete products, such as irrigation flumes, pipes, etc., are loaded from the plantation-owned and operated concrete products yard onto trucks by hand.

Herbicides are hauled in their original containers from a Plantation warehouse to nearby mixing station by trucks. After the herbicide is mixed, it is put into 2-gallon containers and trucked out to the fields in a one-ton truck. Tank trucks haul mixed diluted herbicide solution out and spray this on weeds located along roadsides, ditches, etc.

Cane seed is trucked on 2½-ton to 7½-ton trucks from the field in which the seed is cut into the fields where it is to be planted. This seed is bagged and loaded by hand.

All field mechanical equipment is hauled from field to field or to the shops on rubber-tired trailers drawn by trucks or a rubber-tired tractor. Heavy equipment, such as harvesting machines, plow tractors, cane rakes, bulldozers, [147] etc., is hauled on a large 25-ton, 6-wheeled trailer drawn by a 98-horsepower rubber-tired tractor. Light equipment, such as ratooning tractors and other light tractors, is hauled on a 2-wheel trailer drawn by a 2½-ton truck.

Fuel and servicing equipment for field power operated equipment, such as harvesting machines,

tractors, air compressors, etc., is hauled out in tank trucks. Fuel for the two steam irrigation pumps is hauled in O. R. & L. tank cars from the O. R. & L. siding to the pumps by Plantation locomotives on the Plantation railroad.

Sand is hauled from a Plantation-owned sand area in Waimea Bay to various parts of the plantation in 2½ to 7½-ton trucks. The sand is loaded mainly by crane and clamshell bucket, but is sometimes loaded by hand.

At times when there is a shortage of certain supplies at the plantation, trucks may go to Honolulu or any part of the island to obtain them.

## 16.

### Cleaning Cane

Locomotives deliver the loaded cane cars to the mill yard to be moved up to the cane cleaning plant where the cane is washed in preparation for conveyance into the mill. Locomotives bringing in cane cars may move the cars directly into position for unloading into the cane cleaning plant, if all cane cars delivered to the mill on the preceding day have been emptied during the night operations of the mill. One of the mill yard track lines leads directly into the cane cleaning plant and accommodates approximately one hundred loaded cars. An adjacent track line receives empty cars from the cane cleaning plant and accommodates about sixty cars. During the night, loaded cars are moved up from the track [148] sidings by a mill yard en-

gine, since additional loaded cane cars are not delivered to the mill from the field during the night.

Time elapsing between the loading of the cars in the field and the unloading into the cane cleaning plant may vary from four to sixteen hours. Time elapsing between the arrival of cane from the field to the mill yard and the unloading into the cane cleaning plant may vary from a few minutes to an hour during the morning. Cane delivered to the mill yard in the afternoon may not be unloaded until the following morning.

Cane once cut or burned undergoes an inversion process involving a chemical reaction of the sucrose, the sugar content of the cane, which transforms it into undesirable compounds. This reaction, commencing with burning and harvesting, continues with increased acceleration until the juice is chemically treated or concentrated in the form of syrup. Hold over of cane in cars in the mill yard will result in a substantial inversion factor. For this reason, harvesting activities and mill activities are closely coordinated to reduce to a minimum any hold over of the cane before crushing. Ideal conditions are those in which there is a complete continuity of movement of the cut cane, permitting direct and immediate delivery from the harvest field to the cane cleaning plant for cleaning preparatory to crushing.

The following table shows the progressive rate of deterioration of burned cane, whether standing

or cut, when not milled and the resulting percentages of sugar losses: [149]

Days since burning or cutting	1	2	3	4	5
Burned, left standing .....	3.05	6.09	9.14	12.18	15.23
Burned, cut at once.....	2.84	5.69	8.53	11.38	14.22
Days since burning or cutting	6	7	8	9	10
Burned, left standing.....	18.03	20.83	23.63	26.43	29.23
Burned, cut at once.....	17.43	20.64	23.84	27.05	30.26

The purpose of the cane cleaning plant is to remove as much trash as is mechanically possible. Tramp iron and rocks passing into the mill rollers result in serious damage to the rollers and equipment, requiring shut downs for repairs.

Loaded cane cars are pulled into the cane cleaning plant by means of a heavy steel fork that engages the end car and the car line is pulled forward one car length at a time by means of an electric gear motor, sprocket and chain. As the string of loaded cars is hauled into the cane cleaning plant, each car is uncoupled as it goes onto a small railroad scale. Each loaded cane car is supplied with a ticket in a small metal pocket on the end of the car, the ticket having been placed there in the field at the time of loading. These tickets have the car numbers marked on them, together with information as to the field, the time and date the cane was burned, the date of loading and the cane variety. The scale man removes the ticket from each car and enters the weight while the car is on the scale. These tickets are collected and totaled hourly and are an important step in mill control. No washing or trash removal takes place prior to weighing the cars of cane.



After scaling a loaded car, the car is pushed onto the car dumper by the next car entering the scale. When it [150] has come to a stop in the center of the dumper table with the front car axle against a stop, the cane cleaning plant operator clamps it down to the dumper table by means of electrically operated clamps which engage the car. The operator then unhooks the car side chains that hold the cane in the car. The electrically operated dumper table is tilted to an angle of sixty degrees and the cane slides out of the side of the car and into the tumbling conveyor, after which the operator lowers the dumper. The empty car on the dumper table is displaced by the next loaded car coming off the scale and rolls onto an electrically operated transfer car which carries it across to the empty car line. It is then pushed onto the empty line by a motor operated pusher and is manually coupled to the end car in the empty string, the car couplers being of the **link and pin type**.

The loaded car line is replenished at about two hour intervals and empty cars are hauled away at one to two-hour intervals.

The cleaning process is divided into three parts and starts in a tumbling conveyor. First, the cane bundle is tumbled on a steep carrier sixteen feet wide and about fifty feet long, consisting of pipes attached to a conveyor chain with one-half inch spaces between the pipes. Cleats are attached to the pipes to facilitate carrying the cane up the steep incline of this carrier. Stationary side plates prevent the cane from falling off the sides of the con-

veyor. The conveyor moves at a maximum rate of 180 feet per minute, but may be operated at any speed below this since it is driven by a variable speed motor. The cane comes off the cars in a tangled mass and the tumbling conveyor breaks up the mass so that the cane is carried up the steep incline in a thin [151] layer. Considerable amounts of dirt and fine trash fall through the carrier onto a drag conveyor below. When rocks are present in the cane, the carrier is stopped after they have been shaken out of the cane mass and are rolled by hand off the lower end into a rock conveyor below. A gate at the lower end of the carrier is raised by means of an electric hoist during this operation.

As the cane leaves the upper end of the tumbling conveyor, it is dropped onto the lower end of a wash carrier. This wash carrier is sixteen feet wide and twenty-five feet long. Water is sprayed on the cane at the rate of about 2,000 gallons per minute as it is carried under three sets of nozzles placed over the upper portion of the carrier. This water washes the cane directly under the nozzles and cascades down through the cane approaching the nozzles. In this way, most of the mud and dirt is removed from the cane. This carrier is driven by the tumbling conveyor motor.

When the washed cane leaves the wash carrier, it is skidded down steel plates to leaf stripping rolls. There are twenty-four pairs of these rolls which are in contract and turn toward each other. They are driven by six electric 25-horsepower gear motors and remove most of the leaves and trash

from the cane as the cane slides over them. Very little cane is pulled through. Leaves and trash thus removed fall into a flume underneath the rolls, and this material is flumed away.

After leaving the leaf stripping rolls, the cane falls into the mill carrier, which transports it to the crushing plant. When rocky fields are being harvested, rocks find they way into this carrier and a watchman is kept at this station to watch for and remove them. The lower end of [152] the mill carrier is in a cement lined pit six feet wide. During bad weather when the cane is unusually dirty, water is sprayed on the cane in the lower portion of the carrier and the dirty water is pumped out of the pit.

Most of the mud and dirt from the cane is flumed with the wash water to low fields near the mill. Leaves and trash, removed by the stripping rolls, are flumed to a nearby motor driven three-roll mill where the material is ground fine and then dumped into the wash water flume for disposal.

Seven men per shift are required in the cane cleaning plant. One man uncouples the loaded cars as they come onto the cane scale. Another scales the cars. A third operates the electrical control board that activates the car haul, the car dumper, the empty car pusher, the rock and dirt carriers, the tumbling conveyor and the wash carrier. A fourth couples up empty cars. The uncouple man, the scale man and the couple-up man assist in removing any cane left on the cars after they have been dumped and in removing stones and foreign

material from the tumbling conveyor. A fifth man is stationed at the wash carrier to see that no cane jams occur and to remove pieces of cane from the small drag carrier that screens the dirty wash water. A sixth man serves as rock watchman on the mill carrier. The seventh man drives a rock and dirt disposal truck.

In addition to the seven men per shift in the cleaning plant, two men are required to work, on the day shift only, in the disposal fields, spreading the flumed ground trash and mud.

## 17

### Chopping and Crushing Cane

Extraction of juice from the cane stalks is possible [153] only when the cane cells and tissues are ruptured. This rupturing action can be advanced by shredding or chopping the cane with knives, and thereafter completing the extraction process by compression exercised between grinding rollers.

After the cane has passed through the cane cleaning plant, it is carried on a six-foot wide carrier to the crushing plant. Before entering the crusher room, the cane passes under a set of sixty-eight revolving knives bolted to discs on a shaft set across the carrier. The shaft is driven by a 125-horsepower motor. These knives serve to level the blanket of cane as it is carried up to the crusher. A similar set of knives is located at the top of the carrier. These knives chop up the cane as it leaves the carrier. From the mill carrier the chopped cane is dropped down a chute into the crusher rolls.

The crushing operation consists of a cane crusher and five mills arranged in tandem and extended about 136 feet.

The crusher consists of two rolls, 78 inches wide and 39 inches in diameter. The five mills consist of three rolls each which are also 78 inches wide and have a diameter slightly less than the diameter of the rolls in the crusher. The three rolls in each mill are arranged horizontally with two rolls below and one roll fitting down on top. The term "mill" is here used to refer to each of the five units of three rolls. As so used, the term should not be confused with its common usage in referring to the building in which the entire processing operation is conducted. The term "crusher" is used to refer to the unit of two rolls which crush the cane and pass it on to the mills.

The purpose of the rolls is to press the fibre and remove the juice contained therein. The fibre passing through [154] the rolls is referred to as bagasse. One hundred percent extraction of the juice is impossible due in part to the capillarity of the bagasse. Normally, 40 to 60 per cent extraction is achieved in the crusher rolls. The purpose of the succeeding five mills is to extract the remaining juices.

The crusher rolls are set horizontally with a 1 inch opening between the rolls. Bearings on the top roll are so arranged as to permit the top roll to rise slightly as the cane goes through. At the same time, hydraulic jacks are set in such a manner as to deliver the desired pressure on the crushed cane



as it goes through. Flow of cane to the crusher is controlled by regulating the speed of the mill carrier. Juice squeezed out of the cane is collected in a sloped copper juice pan set below the crusher and the first mill rolls. This juice flows through a screen and is flumed to a juice tank from which it is pumped to the boiling room.

The crushed cane passing between the crusher rolls is discharged directly into the first mill. Clearance between the front or leading bottom roll and the top roll in this mill is three-eighths of an inch. Clearance between the top roll and the back or discharge roll is one-fourth of an inch. Juice extracted in the first mill is collected in the same pan that receives the crusher juice. Approximately 70 per cent of the normal juice in the cane is extracted in the crusher and the first mill.

The succeeding four mills are similar to the first mill, except that the rolls are set slightly closer together.

The crushed or ground cane is conveyed from one mill to the succeeding mills by means of an inclined closed chute. Before entering the last mill, hot water is applied to the ground cane. This resulting solution is squeezed out [155] in the last mill and is collected in a conical copper pan under the mill, from which it is pumped to juice spreaders between the previous mills where it is spread on the crushed cane and again passes through the other mills, ultimately being collected in the one juice tank from which it is then pumped to the boiling house.

Approximately 96 to 97 per cent of the sucrose in the cane is removed in the milling process.

Moisture content of the bagasse averages 45 per cent. Fuel value is roughly equivalent to saw dust. All of the bagasse is burned under the boilers to generate steam for the processing of the cane and to produce power for the various integrated operations of the Plantation as will be hereinafter explained. The bagasse is carried by an inclined drag carrier from the No. 5 mill to an overhead distributing conveyor in the fire room.

The mill and crusher rolls are driven by three steam engines totaling 1,400 horsepower. Since the crusher rolls turn at a different speed from the mill rolls while engines operate at a higher speed, a system of heavy gears supplies the proper reductions in power.

Eight motor driven centrifugal juice pumps are installed to pump the juices through the crushing and milling process and also to pump the mixed juice to the boiling room.

Seven men per shift work in the crushing plant. Three engine tenders operate the three engines providing power for the crusher and the mills. By regulating the speed of the engines, the engine tenders can maintain an even feed through the crusher and mills in coordination with the feeding of the cane from the cane cleaning plant. One engine tender is in charge of the crusher and the mills and regulates the [156] rate of operation. The second engine tender is responsible for repairs in the cane cleaning plant. The third tender is

responsible for lubrication of the mill gear system. The fourth man in the crew acts as mill feeder, regulating the flow of cane to the crusher. The fifth man is the mill oiler, responsible for the oiling and greasing of the crusher and mill mechanisms, and also performs the oiling and greasing of the cane cleaning plant. A sixth man is responsible for maintaining the pressures exerted upon the top mill rolls. He also watches the juice pans under the mill to prevent trash clogging and operates the juice pumps. The seventh man is a utility man, taking assignments as directed by the shift engineer.

In case of equipment failures, the engine tenders, assisted by other crew members, perform repair work under the direction of the shift engineers. Employees in the welding shop, machine shop and blacksmith shop, however, are called upon to do most of the repair work requiring welding or machining. All repair work required during processing operations to restart equipment must be handled immediately to avoid serious sugar losses in burned and harvested cane and in cane and cane juices being processed and to avoid costly mill cleaning operations.

## 18

### Clarifying and Crystallizing

Clarifying of the juices extracted from the cane in the crusher and mills and the crystallizing into the raw sugar crystals are performed in the boiling house.

The raw cane juice from the crusher and mills is discharged from a flume into juice scales and is there weighed.

The juice is emptied from the scales into a receiving [157] tank underneath the scales. Milk of lime solution is introduced into the juice and reacts upon the phosphoric acid to form a precipitate which permits the removal of the foreign matter not in solution.

The mixture of juice and milk of lime is pumped from the receiving tank through a set of four horizontal tubular heaters which function in sets of two each.

The limed, heated juice is piped to the clarifier. This consists of a series of five trays, one above the other, in a closed tank. Scraper arms revolve slowly in this clarifier and the precipitated "mud" settles in the trays and is scraped to the side to flow to the bottom of the clarifier tank. The clean juice is drawn off through a pipe from each compartment formed by the series of trays. The clarifier, with its five trays, measures 28 feet in diameter and 30 feet in height.

The "mud" in the bottom of the clarifier is treated in a side process since it contains considerable sucrose and must be filtered to enable recovery. It is therefore pumped to a filter station. There it is first passed through a mixing tank where fine bagasse, pneumatically conveyed from the fire room, is added to the "mud" as a filter aid. Three filters, consisting of rotating drums and acting on the vacuum principle, rotate in the solution

of "mud" and bagasse, picking up a so-called "mud" cake on the surface of the drum which is then carried through several hot water sprays that wash out a large amount of sucrose, leaving a waste residue which is disposed of by means of a conveyor operating to a flume where it is washed out to the mill waste disposal yard. Washings from the filter, although not clear enough to be added to the clarified juice, are pumped to the mixed juice [158] tank for reprocessing as a part of the initial stage described above.

After passing through the clarifier, the clean juice flows to a supply tank from which it is pumped to the evaporator station. By evaporating out the water which holds the sucrose in solution, the juice of the cane is concentrated. This permits crystallization of the sucrose in the form of raw sugar. This concentration, performed after the elimination of as many impurities as possible in the clarifier, is begun in the evaporators, where the major water content is removed. The second stage, that which takes place in the vacuum pane, is the crystallization stage proper.

In the evaporation stage, the juice is pumped first to the pre-evaporator where low pressure steam is introduced in copper tubes jutting up into the liquid juice contained in the pre-evaporator. This causes the juice to boil and steam vapor is produced, collecting in the top of the pre-evaporator from which it is withdrawn for heating the vacuum pans (the secondary stage referred to above). The juice remaining in the pre-evaporator



flows down to the bottom and then moves into the first cell of the quintuple series of the evaporator, where the same process is repeated, and so on through the remaining four cells of the unit, the repeated process in each cell resulting in further evaporation. Each of the quintuple cells of the evaporator is heated by the vapors withdrawn from the preceding cell.

After passing through the evaporator, the juice, now reduced to a syrup, is pumped to supply tanks at the vacuum pan station. Here the formation of sugar crystals occurs. There are five vacuum pans, each operated as an individual unit. They measure 10 to 14 feet in diameter and [159] 15 feet in height. Each pan is capable of making thirty-five tons of raw sugar at a time. The vacuum pans are heated either by the hot vapors from the pre-evaporator or by low-pressure steam from the fire room. Removal of vapors in the process is accomplished by a central vacuum pump which also supplies the evaporators.

High grade and low grade raw sugar are produced. High grade raw sugar is always the final product while the low grade raw sugar is reprocessed to make **high grade sugar**.

Low grade raw sugar is drawn into one of the vacuum pans, into which the sugar syrup is then fed until the pan is full. This process requires approximately 2½ to 3½ hours. During this time the mixture of low grade raw sugar and syrup is boiling and the density is maintained at an optimum point which will allow the original sugar crystal to

grow in size but not form any additional crystals. This condition is determined by the operator who removes and inspects small samples from time to time. After 10 to 12 hours, the completed batch, consisting of sugar crystals and molasses, is dropped from the pan into a mixing tank from which it is fed into centrifugal machines that separate the sugar from the molasses.

The molasses is then pumped back into the vacuum pans where it is mixed with syrup. The same process described above is then performed with this mixture to produce another grade of raw sugar, which is also classed as high grade, but not as high as the grade above described. The molasses resulting in this operation is lower in sucrose content. This molasses is the supply for obtaining low grade raw sugar.

Formation of low grade raw sugar is accomplished by the same boiling process, differing only from the making of high grade raw sugar in that no sugar crystals are introduced [160] as a foundation but the molasses is concentrated to the point where spontaneous crystallization occurs. The process is then checked, and additional molasses is gradually fed into the pan at a controlled rate which will result in the growth of the crystals formed rather than formation of additional crystals. This feeding process continues for six to ten hours. This mixture is then dropped into an open cylindrical tank having a capacity of 850 cubic feet. These tanks are called crystallizers. There are six-

teen in use. After two to three days in process the material is pumped into a mixing tank from which it is fed into low grade centrifugals.

The centrifugal station consists of nineteen low grade and seven high grade centrifugal machines. These machines consist of rotary baskets suspended on a spindle and lined with perforated copper screen. They revolve at a high rate of speed by a direct connected electric motor, and the centrifugal force throws out the liquid material into a curb from which it is flumed to a storage tank while the sugar crystals remain on the screen. They are removed by a mechanical scraper moving vertically along the surface of the screen. The low grade centrifugal machine operates for a period from 45 to 75 minutes depending upon the quality and amounts of material on hand. It is then stopped, the sugar removed, and the cycle repeated.

Since no further extraction of sugar is possible, the low grade molasses remaining is an end by-product. During 1946, an average of 460 tons of molasses a week was obtained which amounted to about 3.4 per cent of the weight of the net cane processed or approximately .26 ton of molasses per ton of raw sugar. This molasses is pumped to a storage tank with a capacity of 1,300 tons and from this storage tank it is [161] repumped into railroad tank cars for shipment to and sale in the continental United States. A very small percentage is sold locally for cattle feed. The percentage so sold averages 500 to 600 tons per year.

Low grade sugar removed from the centrifugals is mixed with water and pumped to the vacuum pans for use in the process described above.

The high grade sugar centrifugals are similar to the low grade machines except that they are driven by a high pressure water jet and the drying cycle is only 3 to 4 minutes. The dried sugar is removed from the centrifugals to an adjoining sugar bin preliminary to bagging. The boiling house employs a total personnel of 45 including the boiling house superintendent and three shift foremen.

## 19.

### Sugar Bagging and Shipping

The raw sugar flows from the bin through an automatic scale which weighs out a 100-pound load, and dumps it into a chute at the neck of which the operator has attached a hemp bag. The entire operation occurs in timed sequences automatically upon the closing of a switch. The released bag of sugar is carried out by a conveyor through a sewing machine head where the bag opening is sewn, and the bagged sugar continues on the conveyor to a railroad car for loading and shipment to the continental United States or to the sugar warehouse on the plantation for temporary storage.

There are two sets of scales, baggers and sewing machines with one operator each. Each set handles about seven bags of sugar a minute. At present time the bagging station is operated for two 8-hour shifts with two operators on one shift and one

operator on the second shift. An average [162] of 275 to 300 tons per day is bagged at this station. This represents the average daily raw sugar production of the mill.

## 20.

## Work Schedules of Mill Employees

Production in the mill operations is keyed basically to a six-day week with continuous and around-the-clock operations, the mill stopping the grinding of cane at 2:00 p.m. on Saturdays and starting up at 2:00 p.m. on Sundays. The 24-hour day is divided into three 8-hour shifts running from 6:00 a.m. to 2:00 p.m., 2:00 p.m. to 10:00 p.m., 10:00 p.m. to 6:00 a.m.

## 21.

## Week-End Repair of Mill

The weekly 24-hour shutdown period of mill is necessary to perform cleaning and repair operations. The filter screens must be cleaned out with a traveling steam jet which takes about 45 minutes per filter and is performed by the regular shift operator. The juice heaters must be opened up, the tubes steamed for half an hour, and then brushed to remove the loose scale. Considerable scale forms in the tubes of the evaporators and after the last juice is removed on Saturday afternoon the effect is washed out with water and a continuous spray of caustic soda solution is applied for 5 to 6 hours. Then muriatic acid is added and boiled, the cells



cleaned out with water and opened in preparation for the scraping and brushing operations. The vacuum pans are also boiled out with a weak acid solution and the tubes brushed manually whenever necessary. The oilers and repairmen also do the necessary work on the various pieces of equipment that can only be accomplished while they are idle.

Over the week-end two shift crews clean up and make such repairs as are necessary in the crushing plant and cane cleaning plant. Engine tenders are responsible for mechanical jobs in such plants. They are assisted by the remaining crusher room men and the operators and scalemen from the cane cleaning plant. Mill oilers are occupied in greasing up the equipment in the cane cleaning plant.

While, in general, repairs are performed during the week-end, every effort is made to anticipate week-end requirements and the various shops located near the mill perform as much work as possible while the mill is in operation.

## 22.

### No Non-Plantation Cane Processed by Mill

All of the cane processed by the Plantation mill is produced on the plantation and by the Plantation.

## 23.

### Sugar Warehousing

Under normal operating conditions the bagged sugar after leaving the mill is loaded directly into

the railroad box cars for shipment. Due to the limited number of cars and storage space at the port wharves and occasional interruptions in ship schedules, the sugar may be stored temporarily from time to time in the plantation sugar warehouse. But even this sugar is normally removed within a month's time and the warehouse is usually empty at the end of the grinding season. During the last five year period there were two years in which no sugar was stored in the plantation warehouse. Raw sugar is never stored at the plantation because of price, market or other economic considerations. The most efficient and profitable operations call for shipment to mainland refineries immediately upon production. [164]

When stored in the sugar warehouse, the sugar bags are carried by a long belt conveyor from the room in the mill where they are weighed and filled to one end of the sugar warehouse building. From here they drop in a chute to a series of portable conveyors which carry them to any part of the building where they are stacked in piles. Additional help is needed in performing this piling operation and two men from the field force are temporarily transferred to assist the regular pilers. To remove the sugar bags to rail cars for shipment a crew of six or seven men is obtained from the field as the regular men are usually occupied in handling the current production.

In addition to sugar, all of the empty sugar bags, in bales of one thousand to six hundred bags each,

are stored in the warehouse. These are charged out as they are removed to the mill for use. Due to a shortage of warehouse space, fertilizer is also stored in bags in this building from time to time.

## 24.

### Fire Room and Power Production

In extracting the juices from the sugar cane, one of the by-products is the cane fibre from the cane stalks, which is referred to as bagasse. When dried, one ton of bagasse has a fuel value approximately equivalent to two barrels of fuel oil. As indicated above, the extraction of the juices from the cane fibre and the processing of sugar cane into raw sugar require large amounts of power for the operation of the prime movers, conveyors and pumps. It is therefore traditional in sugar cane processing to utilize the bagasse as an economical source of fuel for the production of power for use in performing the various processing operations. [165] An average of approximately three thousand tons of bagasse is produced each week when the mill is operating at full capacity. Fuel is also essential in the processing operations for the production of steam for heating and evaporating of the juices and the crystallization of the sugar. Fuel is also used to produce steam for the generation of electric power needed in the various operations of the plantation, as will be hereinafter more fully described. If the bagasse were disposed of as waste, other fuel would have to be obtained in order to obtain steam.

If the bagasse were not utilized as fuel, a difficult disposal problem would be presented because of its bulkiness and the large volume involved. Bagasse produced by the plantation has no marketable value.

The Plantation attempts to save and store enough bagasse during the week to meet the requirements for operating the boiler furnaces on the week-ends when cane is not being ground. Sufficient quantities of bagasse are not always available to satisfy the fuel requirements of the mill. This condition occurs during periods of breakdown of machinery and during periods of wet weather when harvesting and processing operations are slowed down by reason of heavy trash contents. The boiler furnaces are therefore equipped to burn fuel oil which is stored in a concrete fuel oil tank located in the mill yard near the fire room for convenience of supply.

The fire room of the mill is located adjacent to the crusher room. It houses seven water tube boilers. Boiler feed pumps and two condensate pumps are housed at one end of the fire room and are used to supply water. A condensate tank is located in the mill yard area adjacent to the fire room. Fuel oil pumps and a fuel oil heater are also located [166] in the fire room area for use when fuel oil is being burned.

Furnaces used in burning bagasse are set in front of the boilers in the fire room. The bagasse is fed into the furnaces through chutes connecting with the bagasse conveyor from the crushing room.

Fuel oil burners are installed in the back of the boilers and the oil is burned directly below the boiler tubes.

Steam is generated at an average rate of approximately 150,000 pounds per hour when the mill is operating at a maximum capacity. Steam lines lead from the fire room to the crusher room where steam is used to drive the mill engines which in turn drive the crusher rolls and the mill rolls. Exhaust steam from these engines is piped to the boiling house for direct use in the processing operations.

Another steam line from the fire room leads to the power room for generation of electric power by a turbo-generator and two steam engine driven generators. Steam enters the turbine at a pressure point of approximately 150 pounds and after conversion of the initial energy in the steam into electrical energy by the generator, bled steam, now carrying a pressure of approximately 10 pounds, is piped to the boiling house for use as process steam supplementing the steam exhausted from the mill engines. Steam is also exhausted from the engine driven generators into the process steam line in an identical manner with the exhaust steam from the mill engines.

The automatic bleeder valve on the turbo-generator is the main control point for maintaining the pressure in the process steam line at a given amount. A drop in pressure in the process line will indicate insufficient process steam [167] for the boiling house requirements, in which case the tur-



bine bleeder valve opens automatically, thereby increasing the flow of steam to the process line to maintain the necessary pressure for boiling house operations. On the other hand, if the pressure in the process line increases above normal, the bleeder valve then closes proportionately, thereby restricting the flow of steam to the process line and returning the process line pressure to normal requirements.

Another steam line from the fire room supplies steam to the steam driven auxiliary units in the boiling house, and still another leads to the boiler pump room to operate the boiler feed pumps.

Returning condensate from the power room and boiling house is heated, together with any required make up water by exhaust steam from the boiler feed pump engines. If there is an excess supply of returning condensate, this flows into the boiler feed water tank outside the fire room.

Seven men per shift work in the fire room with the addition of two boiler cleaners on the day shift. The water tender is the fire room foreman and is under the supervision of the shift engineer. He directs the fire room men and also sees that the water in the boilers is maintained at the proper level at all times and that the feed water regulators are working properly. It is his duty to blow down the boilers at intervals to keep the solids in the boiler water below safe operating limits. The fire room oiler assists the water tender, takes care of the pumps, oils the carriers and bagasse feeders,

operates oil burners if required and assists in shoveling bagasse when the mill stops. Two firemen regulate the flow of bagasse to the fires and regulate draft with dampers to maintain steam pressure. They also watch the water [168] columns on the boilers. Three ash and trash men clean the furnaces, distribute bagasse in the bagasse storage space as required and shovel trash from the stock pile into the reclaiming conveyor when the mill is stopped. Two boiler cleaners work on the day shift only. Besides cleaning boilers they take care of minor repair work in the fire room. Except for a few pumps, there is no duplicate equipment. Generally three shifts are used in the fire room for week-end repairs.

## 25.

## Generation and Distribution of Electric Power

As set forth before in connection with the production of steam power in the fire room, the electric power generating equipment of the Plantation is located in the mill. It consists of one 6600-volt generator driven by a steam turbine and two 440-volt generators driven by reciprocating steam engines.<sup>4</sup> The electric power generated by this machinery is generated from steam produced in the boilers, which passes through the generating machinery and is then conveyed through steam lines

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<sup>4</sup> The Plantation also has a hydro-electric plant, known as the Kemoo Plant, located on the upper side of the Plantation. This plant has not been operating since 1943 and is completely shut down for an indefinite period.

for use in the processing operations in the boiling room.

Electric power generated is not sufficient to supply the needs of the Plantation. For the purpose of supplementing the power generated, electric power is purchased from the Hawaiian Electric Company, Limited, an independently owned and operated public utility, on the Island of Oahu. During the period 1941-1945 inclusive, power generated in the Plantation system represented 64 6/10 per cent of the amount [169] consumed. The remaining 35 4/10 per cent was purchased from the Hawaiian Electric Company. The following table represents a breakdown of this power generated and purchased:

POWER GENERATED AND PURCHASED

(Kilowatt-Hours)

Year	Power Generated	Net Purchased	Total
1941	13,920,751	6,298,328	20,219,079
1942	12,107,338	4,252,311	16,359,649
1943	11,910,190	6,842,133	18,752,323
1944	13,362,393	8,540,695	21,903,088
1945	13,087,887	9,236,272	22,324,159
Average	12,877,712	7,033,948	19,911,659
Percentage			
Average	64.6%	35.4%	100%

The power generated and purchased by the Plantation is distributed to the mill, field irrigation pumps, repair shops and related buildings, domestic water pumps, plantation houses and services and to several small non-plantation users living in the plantation community who, because of their location, cannot be conveniently served from the present transmission lines of the Hawaiian Electric Com-

pany. The electric transmission lines representing the distribution system of both the Plantation and the Hawaiian Electric are shown on the map attached hereto as Exhibit "E".

For the years 1941-1945 inclusive, the use of the electric energy distributed by the Plantation in the terms of percentages was divided as follows:

For mill, shops and related buildings.....	36.3%
For plantation irrigation pumps.....	47.4%
For plantation domestic water pumps.....	3.9%
For Sundry use .....	12.4%

The power distributed for sundry use includes power distributed to plantation houses for lighting, electric ranges, water heaters and other electrical appliances; to street lighting, club houses, gymnasiums, playgrounds, bath houses, [170] plantation store and branches, and a hospital; and to several non-plantation retail stores and service establishments, churches and houses all situated in the general plantation community. The total amount of power used by all non-plantation persons was less than 1% of the total power distributed by the Plantation for the years 1941-1945 inclusive. The various percentages of use set forth for such years are substantially true today except that the distribution to non-plantation users in the community is now approximately  $\frac{1}{2}$  of 1% of the total power distributed by the Plantation because these users are constantly being absorbed by the Hawaiian Electric as it extends its transmission lines. None of the electric power distributed to non-plantation users by the Plantation is used for or in connection with the production of goods for interstate commerce, nor is

it used to operate any instrumentality of interstate commerce nor is it transmitted into interstate commerce.

As indicated before, for the purpose of obtaining additional power from the Hawaiian Electric Company, the Plantation system is tied into the former system throughout the year. As a consequence, on rare and infrequent occasions the Plantation will feed back power into the Hawaiian Electric Company lines. The feed back into the Hawaiian Electric lines occurs when the electrical load of the Plantation is small and the steam is great. Under these conditions the Plantation may generate more power than it uses. This situation may occur on week-ends when the mill is closed down and the mill requirements are slight or completely absent or it may occur at periods when some field irrigation pumps have shut down. Power is not fed back to the Hawaiian Electric lines for the purpose of selling power but only because it [171] is a necessary, convenient and economical method of disposing of the excess power. To avoid feeding back power in the situation described would be costly and impractical as it would either require a complete resetting of the plantation generators to produce less power (which would necessitate the closing down of the power plant) or it would require expensive machinery which would synchronize the generation requirements with the required power load of the Plantation.

The times of the feed back are infrequent, irregu-



lar and unpredictable and the Hawaiian Electric has no need for such power in this area.

A chart showing the total amount of power purchased from Hawaiian Electric and the total credit allowances for feed back in dollar volume is set forth for the years 1941 to August 31, 1946 inclusive.

Year	Total Dollar Volume of Power Purchased from H. E. Co.	Total Dollar Credit Allowances for Feed Back from H. E. Co.
1941	\$ 65,320.42	\$ 602.12
1942	51,965.41	1,286.88
1943	74,362.23	2,377.54
1944	92,129.41	1,023.36
1945	106,339.01	288.20
1946 Aug. 31	56,163.51	431.63
	<hr/> \$446,279.99	<hr/> \$6,009.73

Operation of the mill power plant requires one operator and one auxiliary tender per shift. One mill maintenance electrician is needed for the shift from 2:00 p.m. to 10:00 p.m. and one for the shift from 10:00 p.m. to 6:00 a.m. [172] Electricians from the electric shop also are on call for necessary repairs. During the off season the turbines, steam engines, generators, motors and auxiliary equipment in the mill are overhauled and reconditioned and during such period the Plantation generates no electric power but purchases all of the power which it needs from the Hawaiian Electric Company.

## 26.

### Service Shops

Both field and mill operations necessitate the equipping and maintaining of complete service shops for prompt minor repairs and emergency work and

major overhaul. Machinery breakdowns in the mill may result in a shutdown of the entire mill which, in turn, necessitates a discontinuance of harvesting and transportation operations until mill repairs are completed. Breakdown of harvesting machinery or of cane transportation facilities in turn may result in a shutdown of the entire mill. Repair shops are located in an area extending not more than 300 feet from the mill building. The location of the various service shops is shown on the map attached as Exhibit "F" which is attached hereto and made a part hereof. A list of the shops and the work which is performed by their personnel is as follows:

(a) Machine Shop: This shop is staffed by eight employees working under the supervision of a machine shop foreman. Practically all the machining work of the Plantation, except heavy work required by the mill, railroad and shops, is done in the machine shop. The grinding of crankshafts for cars, trucks, tractors and cranes and the machining of emergency parts for such equipment is also performed here, as well as machine work on irrigation pumps. Major locomotive repairs are made by machine shop personnel working with a heavy [173] crane in the welding shop.

Approximately 46 per cent of all machine shop work is for the mill. Fifty per cent of the annual machine shop work is for other service departments, including repairs to steam engine driven irrigation pumps. During the off season, mill work done by the machine shop accounts for 85 to 90 per cent of the total man-hours' work performed. Work in

this shop is fairly uniform throughout the year with peaks in case of emergency mill repairs and during the mill off season. Locomotive overhaul is carried out to a limited extent during the grinding season to relieve machine shop off season work. Steam engine driven water pumps are scheduled for overhaul after the mill overhaul has been completed and after grinding operations are resumed.

A large portion of the work done by the machine shop personnel is performed within the shop, utilizing shop tools. Shop personnel are, however, from time to time called into the mill, on instructions from the cane processing superintendent, for repairs, regrooving of mill rolls and such other work as cannot be expeditiously handled by mill workers.

The tools of the machine shop include lathes, hydraulic press, drill press, planer, boring machine and crankshaft grinder.

(b) Welding Shop. Five employees work under the welding shop foreman. Approximately 46 per cent of welding shop work is for the mill. During the off season, welding shop work for the mill represents approximately 90 per cent or more of the total man-hours. Most of the welding repairs to mill equipment are made in the shop, although personnel are dispatched to the point of breakdown on instructions received from the cane processing superintendent. Steel cane [174] car repairs are made alongside the shop building by the shop personnel. The welding shop employees also operate pipe rolls located in the pipe rolling shed. The pipe which is rolled is generally irrigation pipe, 18 inches in diam-

eter or larger. Welding of this pipe is performed by the shop welders. In this work the welding shop employees are assisted by employees from the blacksmith or cane loading machine repair shop.

Welding shop equipment consists of heavy pipe rolls, several sets of acetylene and cutting outfits, acetylene generators, two stationary and portable welding generators.

(c) Blacksmith Shop. The blacksmith shop is located adjacent to the mill building. Personnel consists of two blacksmiths and two helpers under the supervision of the Cane Loading Machine Repair Shop foreman. Approximately two days each week are spent by two blacksmiths and two helpers on mill work, consisting principally of constructing and reconditioning of cane carrier leveling and preparation knives. Cane car repair work, such as straightening of bars and channels, repair of tractors and caneloaders and field implement work occupy the great percentage of the man-hours in the shop. Work of this shop is therefore uniform throughout the year.

Equipment of this shop includes two forges, an electric operated hammer and a variety of small tools.

(d) Tinsmith Shop. Personnel consists of a tinsmith journeyman and two employees. In this shop mill repair work is negligible, although light sheet steel work, including maintenance and repair of roof gutters and down pipes, is performed by the shop personnel. Repairs of auto, truck, tractor and caneloader radiators are performed by the shop per-

sonnel. Main work of the shop is the making and reconditioning of tin irrigation scoops. These scoops are used [175] in quantity in the field for the purpose of deflecting water from concrete irrigation flumes to field irrigation lines.

(e) Cane Loading Machine Repair Shop.<sup>5</sup> Personnel consists of twelve employees under the supervision of a foreman. This shop performs all major repairs and overhaul of caneloaders, grabs and miscellaneous field equipment. Men from this shop are occasionally called upon to assist in the emergency mill repairs. They also go into the field to make repairs on caneloading machines during the course of harvesting operations. An important function of this shop is the construction of auxiliary field equipment, such as subsoilers used in plowing, cane line reshapers used to maintain irrigation water lines in the field, and portable track line leveler attachments used in leveling the lines for laying portable tracks. Repairs on such auxiliary field equipment are also made in this shop with the assistance of tractor repair shop personnel.

During the off season at least six of the seven caneloading machines are completely dismantled and reconditioned. The seventh machine is reconditioned after harvesting operations have been resumed. During the off season following the completion of harvesting, ten to twelve caneloading machine operators are brought into the shop to sup-

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<sup>5</sup> On Exhibit "H" some of the work of this shop is carried under the title "Mechanical Harvesting Department."



plement the regular crew and assist in overhaul. Five cane grabs are overhauled and reconditioned during the off season and all other cane grabs are repaired. Three new cane grabs are usually built during the harvesting season.

Shop equipment includes four portable welding [176] generators and three portable welding generators mounted on trucks for field repairs. A hydraulic press, overhead crane, motor driven grinders and a variety of small tools complete the shop equipment.

Four welders in this shop take care of welding repairs in the field and repairs to and building of new field equipment.

(f) Tractor Repair Shop. Employees in this shop number seven, supplemented during the off season by twelve to fifteen tractor operators brought into the shop from the fields to assist in repairs. All tractors used in the harvesting field are overhauled in this shop during the off season. Tractors used for towing cane line reshapers are also overhauled during the off season. Other tractors which cannot be overhauled during the period of off season are scheduled for overhaul at a later date. This may mean that six or seven of a total of forty-eight tractors are left for operating season overhaul. Tractor engines are overhauled at regular periods.

Shop men may be dispatched for repairs of tractors in the fields. As indicated above under (e) personnel from this shop also assist in the repair of field implements in the caneloading machine repair shop.

(g) Garage. Combined garage and field service personnel numbers 24. The primary work of the garage is the maintenance and repair of 98 plantation vehicles divided as follows: 18 passenger vehicles; 48 pickup trucks up to one ton; 27 heavy trucks from 1½ to 7 tons; one motorcycle; 2 fire trucks and 2 panel trucks. These vehicles are assigned to the various operations as follows: [177]

	Passenger Vehicles	Pickup Trucks	Heavy Trucks	Motor- cycles	Fire Trucks	Panel
Field	5	39	20	---	---	---
Shops	2	3	6	1	---	---
Mill	1	---	---	---	---	---
Hospital	1	---	---	---	---	---
Store	---	---	---	---	---	2
Adminis- tration	7	---	---	---	---	---
Fire Trucks	---	---	---	---	2	---
Motor Pool	2	6	1	---	---	---
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
Total	18	48	27	1	2	2
						<hr/>
					Grand Total	98

Overhaul of cars and trucks is scheduled throughout the year with the exception of pickup trucks used by the harvesting men which are overhauled during the off season. Truck drivers are not used to assist in truck or auto repairs since there is generally a spare truck to drive when others are being repaired. Shop equipment consists of 4 overhead cranes, a hoist, valve grinding machine, brake drum lathe, boring machine, tire tools and a variety of special tools.

Complete servicing equipment with necessary personnel is also maintained. Seven full time and one part-time employees are employed to lubricate and wash plantation automobile vehicles at stated inter-

vals. One employee dispenses gasoline and oil at the yard service station. Six employees are employed as helpers to garage mechanics when there is no service work.

Field service covers the daily lubrication of all equipment and replenishing of fuel tanks. Tractors, caneloading machines, portable air compressor, diesel and gas locomotives and all field equipment are serviced daily by a total of 6 men. Two completely equipped service trucks manned by two men each service all field equipment except that in the harvesting fields. In the latter case, a two-wheel [178] trailer, tractor drawn, is kept in each of the two harvesting fields. Oil, gasoline, diesel oil, greases and water are carried on the trailer together with power operated grease guns. One man assigned to each trailer services the cranes and tractors in the harvesting fields. In this way service work can be done during the lunch hour and slack periods without serious interference to harvesting operations. The field men in turn are given an opportunity to learn the operation of loading cranes during their spare time with an opportunity when a vacancy occurs of moving up to a crane operator's job.

(h) Electric Shop. A total of 15 employees works in this shop. Three of these employees are mill electricians who work two weeks in the mill and one week in the shop. This shop is responsible for the maintenance of electric pumps and transmission lines, domestic wiring repairs, including wiring of houses, and the building of new electrical appliances. A small amount of work is done on electrical

machines located in the other shops. In addition to mill repair work done by the employees assigned as electricians to the mill, the electric shop personnel may assist them in case of major electrical repairs required. Approximately 50 per cent of the work in this shop is for the mill. During the off season, approximately 70 per cent of all work is for the mill.

(i) Carpenter Shop. Employees in this shop number 25 carpenters under two supervisors. The carpenters perform all carpenter work on the Plantation which includes the construction of mill scaffoldings, construction and maintenance of railroad trestles and wooden gates for flumes, and the construction and maintenance of cane cars. In addition, they perform necessary maintenance work on plantation buildings and [179] houses. The carpenters also install and maintain steel and concrete pipelines and siphons. Miscellaneous construction, such as construction of tool lockers, scrapers and strainers, is performed in this shop. Field work, including work on the flumes, railroad trestles, siphons, pipelines, etc., accounts for about 25 per cent of the work of the employees. Mill scaffolding and mill building repairs, construction of tool lockers, scrapers and strainers account for about 10 per cent. Maintenance and repairs of plantation buildings and housing account for about 45 per cent. Approximately twenty per cent of the work performed by these employees is devoted to the construction and repair of cane cars. During the off season, the work of the employees in this shop is

similar to that in the grinding season. Additional men, averaging from 10 to 15, may be brought in from the fields to assist in cane car overhauling and general carpentry work during the off season.

(j) Paint Shop. This shop employs five painters under one supervisor. They perform all painting work on the plantation buildings including housing and also occasionally paint siphons and railroad trestles. As a general rule, they do not paint for the mill, this work being done by mill employees. Almost the entire time of the paint shop crew is devoted to painting of plantation buildings and housing throughout the year. During the off season, an average of two additional employees brought in from the fields may assist in the work of this shop.

(k) Plumbing Shop. This shop employs six plumbers working under one supervisor. They perform all plumbing work on the Plantation, including the construction and maintenance of sewer and water systems and the plumbing for buildings and housing. Approximately 10 per cent of the time is devoted to [180] mill plumbing work, 15 per cent to field work and the remainder to housing. Assignments vary little throughout the year. During the off season, an average of two field employees may be assigned to the plumbing shop as helpers.

(l) Roundhouse. Two employees work in this shop servicing, cleaning and firing the plantation locomotives. Additional employees are occasionally assigned to this shop for minor locomotive repairs. It is located near the machine shop.



## 27.

## LABORATORY TESTS AND SAMPLING

Various chemical tests are made by the laboratory personnel in the course of all field and mill operations. This work is performed under the supervision of a chief chemist with the assistance of thirteen chemists, testers and samplers. By careful analyses of various kinds performed relative to the cane and materials in the course of growing, cultivating and harvesting and extraction of the sugar juices, all operations are controlled pursuant to scientific methods.

Determinations of the cane fiber in each field, or variety of cane, are made during each shift. Figures obtained are used in calculating bagasse weights, field distribution and extraction percentages.

Cane leaf analysis is made from samples of cane tops brought in each day and analyzed for green weight mixture, total sugars, nitrogen, potash and phosphate.

Tests are made each day to determine field trash content in harvesting brought to the mill. One car is selected each day for each field being harvested. The car is tagged in the field, placed on side track and then delivered to the mill area. The car is then weighed and the clean sound cane [181] is piled in previously weighed empty cars. Then the car of clean cane and the car from which the dirty cane was removed are weighed and the percentage of trash obtained. Percentage of trash obtained is

used in obtaining the net cane from each field and also the gross cane ground. A check upon cane field yields is maintained in this manner.

Continuous samples are taken from the feed roller of the first mill each hour and also at each change of field harvesting. Records of ratios of cane to available sugar are obtained from these analyses.

Juices extracted by the milling process and entering the boiling house are sampled every hour. Samples obtained are the main basis for determining the sugar in the cane extracted by the milling process and entering the boiling house.

The juice extracted by the discharge roll of the last mill is used in calculating the weight of the bagasse.

One sample is taken every three hours from the clarified juice leaving the clarifier. The difference in purity between this sample and the mixed juice samples will show the relative amount of solids being removed by the lime and heat treatment of the juice.

The purity of the syrup leaving the evaporator is checked with the juice leaving clarifier.

Samples of bagasse are taken every two hours and ash determinations are also made on two samples per day to determine the influence of the different fields on the fire room.

Mixtures of sugar and molasses discharged by the vacuum pans are tested from each full discharge from the pans. Samples are made daily of low grade sugar, commercial raw sugar and waste molasses. The residue removed from the [182] juice dur-

ing the clarification process is made once during each shift. The purpose of this analysis is to determine the amount of sugar lost in the filter cake.

Test is also made of the mill boiler water, locomotive boiler water, steam pumps boiler water and pump water. Pump water from electric pumps and well water are sampled once each month. Wash water from the cleaning plant and condenser water are also analyzed each shift.

## 28.

### Concrete Products Plant

The Plantation operates its own concrete products plant which is located on plantation lands adjacent to the plantation buildings and yard area. At the present time, six men are at work in this plant although the number varies from four to 10 men. Work ordinarily is performed on a single shift basis, but if extra men are working, two shifts may be maintained.

This plant is engaged primarily in producing concrete irrigation flumes and water supply pipe. It also makes some blocks, footings, sidewalk slabs and other various incidental concrete products required by the Plantation. Crushed rock used in the manufacturing process is purchased locally, while 80 to 90 per cent of all cement used is obtained from the mainland. The work consists of setting up forms, mixing and pouring concrete, removing the previous day's products and arranging them in storage. Cement used is stored in cars which are set on the siding near the plant, or the cement is stored in the

cement shed as part of the inventory of general supplies warehousing. In the latter case, unloading of cement is done by the warehouse personnel. [183] Various activities requiring the flumes, pipe and other products receive them direct from the storage area where the products are stored.

The operations do not have any off season. During the off season, however, additional personnel may be brought in from the fields. In 1946, the plant produced approximately 46,000 concrete pieces, including flume sections, pipe and other products.

## 29.

### Storage of Plantation Supplies

Materials and supplies purchased for plantation operations are warehoused or stored in several separate buildings located in the plantation buildings and yard area. Value of supplies on hand averages \$500,000. The total value of goods procured during a year including stock and special order materials averages slightly over \$1,000,000.

Most of the materials received are shipped to the Plantation from Honolulu on the O. R. & L. Purchases may be either local or by order and direct shipment from continental United States. Freight received is placed in the proper warehouses by the warehousing personnel. In almost all cases railroad sidings permit placement of the O. R. & L. cars next to the warehouse receiving the materials. The warehousing personnel is not responsible for, nor does it

engage in, delivering materials to the various operations or shops.

The principal buildings in which the supplies and materials of the Plantation are stored are the general supplies warehouse and the heavy supplies warehouse. They house electrical goods, building hardware, paints, window screening, tractor and caneloading repair parts, copper [184] tubing, pipe stock, metal shapes stock, galvanized sheeting, steel sheets and many other items.

The oil storage warehouse houses lubricants and a limited amount of paint.

Gasoline, fuel oil, diesel oil and kerosene are discharged directly from the O. R. & L. tank cars into storage tanks.

Most of the automotive parts and tractor, caneloading and miscellaneous parts are stored in the garage.

Cement is stored in a separate warehouse. Lime is stored in the mill in the lime room after being unloaded by warehousemen.

Lumber is stored in the open lumber yard adjoining the general supplies warehouse. Herbicides are also stored here.

Fertilizers are usually trucked directly from railroad cars to the field as needed; but if temporary storage is required, they are placed in the sugar warehouse.

The warehousing operations are handled as one unit under a warehouse superintendent with 13 employees. Five clerks perform the bookkeeping and handle accounts. The remainder of the warehouse



personnel is employed in the unloading and storing of stocks and materials, keeping stock record cards and taking inventory.

### 30.

#### Main Administration Office

The location of the main administration office is shown on Exhibit "A" and is about fifteen hundred feet from the plantation buildings and yard area. The manager, assistant manager and staff assistants have their offices in this [185] building. The general accounting office, which is located in this building is administered by the office manager. Employees of the accounting office consist of the cashier, bookkeeper, head timekeeper, six assistant timekeepers, eight subsidiary ledger clerks, five stenographers and typists, or a total of 22 employees working under the Office Manager and Assistant Manager. Four of the timekeepers are engaged in keeping time of field employees. The remaining timekeepers keep time of the shop, store, mill, hospital and village maintenance employees. Payroll records are maintained and salaries and services paid. In addition to this, the accounting office accumulates the customary cost data and prepares the usual financial statements.

The civil engineer has his office in this building and has under him one assistant surveyor, two junior surveyors and two rodmen, all of whom work alternately in the field and also maintain offices in the building. One draftsman also works in this office. The agriculturist and also the industrial re-

lations sections are located in the same office building.

### 31.

#### Stables

The Plantation has one main stable near the plantation buildings and yard area. It uses 38 horses and mules. Horses are used in the fields by the harvesting overseer to ride in the fields. Pack mules are used upon occasion to pack seed, fertilizer, broken concrete flumes and other things in and out of the cane fields. The Plantation has several feeding stations for horses and mules where they are kept temporarily while work is being performed in a particular [186] area. Three employees are assigned to this work.

### 32.

#### OFF SEASON

For efficient operations sugar mills of the Territory must be closed down annually for general repair and reconditioning because of the heavy wear and tear on mill machinery and equipment. That part of the year when the mill is shut down for repairs is termed the "off season." Because of the little variation in climatic and weather conditions from month to month, sugar cane is grown the year around in the Territory and can be harvested and milled any month in the year—and frequently is. The amount of sugar recovered per ton of sugar cane, however, varies somewhat throughout the

year and is highest during the months of May, June and July.

The variation during the year in the ratio of sugar recovery per ton of cane has some influence on the time selected by a plantation for closing down for annual repairs. The selection of the off season is also influenced by wet weather which may make it more difficult to move harvesting machinery in the fields and to burn the leaves from the cane. Exhibit "G" attached hereto and made a part hereof is a date schedule of the off seasons for all plantations in the Territory from 1940 to 1945 inclusive. While it will be seen from this Exhibit that some plantations harvested and milled cane each of the months of the year sometime during this six-year period and that the duration and particular months of the year embraced in the off season differed considerably between the plantations, the majority of the plantations selected their off season sometime during the months of October, November, December and January. Operational [187] difficulties, labor problems, shortages of equipment and other factors frequently make it impossible for a mill to close down during the season when operations are most disadvantageous. For example, the sugar industry of the Territory was on strike from September 1, 1946, to November 19, 1946. As a result of this strike, most plantations of the Territory milled sugar cane during the month of December of that year.

The length of the off season for the sugar indus-

try in the Territory averaged from 2½ to 3 months per year from 1940 to 1945 inclusive as shown by Exhibit "G." But for the Waialua Agricultural Company, Ltd., it averaged approximately three months per year for this period, the dates of which were as follows:

SCHEDULE SHOWING "OFF SEASON"

Year	From	To
1941	Aug. 30, 1941	Jan. 26, 1942
1942	Oct. 6, 1942	Jan. 22, 1943
1943	Oct. 1, 1943	Jan. 17, 1944
1944	Sept. 12, 1944	Jan. 9, 1945
1945	Oct. 3, 1945	Jan. 15, 1946

During the off season for the Territory, there are no harvesting, ratooning, cane transportation, or cane processing operations. All field operations other than harvesting, ratooning and cane transportation continue throughout the year.

33.

Mill Repairs During the Off Season

During the off season extensive repairs are necessary because of severe operating conditions in the mill. In the cane cleaning plant most of the conveyor chains run without lubrication in acid and mud. Stones brought in with the cane damage carrier flights and damage steel plates in carriers.[188] Wet, acid conditions corrode plates and these are replaced when they become thin. Stripping rolls and stripping roll bearings wear out. Chain sprockets wear rapidly because of corrosion and abrasion and are replaced. Bearings are rebushed or bab-bitted and in some cases shafting is replaced. Im-

provements and changes are often necessary. Only during a shutdown period can extensive repairs and alterations be made.

In the crushing plant the mills have to be completely dismantled and worn rolls regrooved or replaced. All turn plates and roll scrapers are replaced. The mill gearing has to be taken apart, inspected and repaired. Worn carrier plates and chains are replaced. Bad piping is fixed and all pumps are overhauled. If these repairs were not done annually, shutdowns would be frequent and excessive losses would be incurred.

In the fire room the tubes in all the boilers are turbed once a year. At this time the drums are scraped and painted and the boilers are inspected by an engineer representing the insurance company with whom the boilers are insured. Extensive repairs to the boiler brick work are usually necessary. Carriers, pumps and valves are overhauled. Piping is inspected and changed where necessary.

Most of the off season repair work is done by the men who operate the mill during the grinding season. All welding is done by men from the welding shop and machine work is done in the plantation machine shop by the machine shop crew except the heavy machine work which is performed in an independently owned and operated shop in Honolulu. The plantation blacksmith shop is called upon frequently and the carpenter shop and electric shop occasionally. [189]

The mill engine tenders do the more important



repair work with the assistance of others. Minor repair jobs are assigned to the oilers. The mill feeders chip the cross grooving in the mill rolls. The cane cleaning plant men work as helpers and scale and paint the steel work in the cane cleaning plant.

In the fire room the oilers, firemen and boiler cleaners turbine the boiler tubes and clean the boiler drums. Brick work is generally done on contract by independent contractors, with the fire room trashmen handling all the materials under the direction of a water tender. Pipe work and carrier repairs are generally done by the water tenders and the boiler cleaners.

Off season work is generally commenced on a three-shift basis. It is necessary that parts going to Honolulu for repairs be sent in as soon as possible. Since the crusher room crane is required in taking the mill apart, it is in great demand to start out with and too much time is lost if all of the men work on one or two shifts. In the fire room it is necessary to get ahead with the tube cleaning and drum cleaning as fast as possible so the boilers may be inspected. As the off season progresses and the work is spread out, it is practical to go on a two-shift and finally a one-shift basis.

The average number of man-days of work performed during each twenty-four hour period during the off season is 116, irrespective of whether the work is on a three-shift, two-shift, or one-shift

basis. This is precisely the same as the average number of man-days of work performed in the mill during each twenty-four hour period during the grinding season, when all work is on a three-shift basis. All mill [190] employees are employed on a forty-eight hour workweek both during the grinding season and the off season.

### 34.

#### Mechanization and Improved Management

The reduction of man-days required to produce a ton of raw sugar, including all operations from the field to the mill inclusive, is illustrated by the following table, showing the number of employees working for the Plantation, the total tons of raw sugar produced, the man-days required per ton of raw sugar and the total acres under cultivation, at 5-year intervals from 1910 to 1945 inclusive:

	Number of Employees	Tons of Raw Sugar Produced	Man Days Per Ton of Sugar	Total Acres Under Cultivation
1910	2,726	30,870	21.2	9,889
1915	2,489	30,697	20.8	10,294
1920	1,824	28,284	19.8	10,622
1925	2,444	29,832	20.7	9,244
1930	2,516	49,981	10.4	9,884
1935	1,619	50,580	8.06	8,573
1940	1,237	57,841	6.9	9,565
1945	951	56,193	4.9	9,415
1946 (9/1)	1,144	.....	.....	.....

From the above it can be seen that the number of man-days required to produce a ton of raw sugar in 1910 was 21.2, while in 1945 it was reduced to 4.9 man-days. This reduction in the man-days required to produce a ton of sugar was brought about through mechanization, improved manage-

ment and the application of scientific methods in irrigating, weeding, plowing, planting, harvesting and the processing of sugar cane into raw sugar. To a great extent hand labor and the use of horse-drawn agricultural equipment and vehicles have been eliminated and motorized equipment substituted in their stead. A few examples will serve to illustrate this.

(a) Up to the year 1936 there was little mechanization in the harvesting operation. The cane was all cut and [191] loaded by hand and much of it was hauled from the fields by mule teams which drew the cars over portable rails to main lines of the railroad. In the year 1937 the use of large mobile crawler type cranes with finger-like grabs was introduced to pull or grab the cane loose from its growing position in the field and load it directly into rail cars, eliminating the necessity for practically all hand cutting and loading. In 1945 a mechanical portable rail lifter was introduced for the lifting and laying of portable rails in cane fields, thus eliminating a substantial amount of hand labor. Mechanization in harvesting alone has reduced the number of men required by the Plantation in these operations from 500 in the year 1935 to 132 in the year 1946.

(b) In the year 1910, 240,600 10-hour man-days were used to irrigate approximately the same area which was irrigated in 1945 with 20,069 8-hour

man-days. This saving in manpower was due to gradual improvements in technique and the introduction of a highly scientific flume irrigation system which not only reduced the man-days needed for irrigation but greatly increased the cane yield per acre.

(c) For many years the weeding of the cane fields was done by hand with a hoe, but for the last few years most of this has been eliminated by applying herbicides to weeds by knapsack sprayers, which has resulted in a substantial reduction of the man-hours required in this operation.

(d) In the year 1910 most of the dead leaves on the cane stalks were stripped from the cane and taken out of the fields by hand preparatory to harvesting. This hand labor was finally eliminated in its entirety when it was discovered that the leaves could be removed by burning the cane in the field without injury to the cane or the soil. [192]

(e) A saving of a substantial amount of man-days was also effected in the mill during the last ten years by the introduction of automatic juice scales, semi-automatic sugar bagging equipment, power-driven stirrers for mixing lime in the cane juice, automatic lime control and continuous mud filterers, a continuous clarifier and bigger centrifugals and the fluming of fire room ashes and mud press directly out of the mill into an adjacent field.

## 35.

## Relationship of Cane Production to Cane Processing in Terms of Direct Operating Expenses and Hours Worked

Attached hereto and made a part hereof is Exhibit "H" showing the total direct operating expenses of the Plantation for the calendar year 1945, itemized according to the various categories of operation. This Exhibit is a true and accurate copy of a record of the Plantation which was the basis for a return filed with the Bureau of Internal Revenue by the Waialua Agricultural Company, Ltd., on March 1, 1946, showing direct operating expenses of the Plantation for the twelve (12) months ended December 31, 1945. Included within the direct operating expenses are all charges for direct labor, materials, electric current, engineering, certain equipment and all other direct service charges as classified and listed on such Exhibit.

As shown by this Exhibit, the total direct operating charges for the calendar year 1945 were \$1,726,278.24. Of this amount, \$1,230,393.63 was for cultivating, irrigation water supply, harvesting, transporting of cane and other general field expenses and \$495,884.61 was for operating and repairing the mill and purchasing sugar bags.

Thus, approximately 71 per cent of the direct operating [193] expenses for the production of a single ton of raw sugar in 1945 was for cultivating,



irrigating, harvesting, transportation and general field expenses as tabulated on the Exhibit, while 29 per cent was for mill expenses and repairs during the grinding season and during the off season, and for sugar bags, also as shown on the Exhibit.

This Exhibit also shows the total number of hours of direct labor attributable to the sugar operations of the Plantation for the calendar year 1945, which was 1,332,679.50. Of this number, 1,024,876.25 hours were for cultivating, irrigation water supply, harvesting, transporting and other work relating to field operations while 307,803.25 hours were for operating and repairing the mill.

### 36.

#### Plantation Villages

At the time the Waialua Agricultural Company plantation was organized, there was no established community having housing or other services or facilities for living in or near the area which it proposed to devote to the production and processing of sugar cane, to accommodate the employees whom the Plantation needed for its operations. As a consequence, it became necessary for the Plantation to construct houses, develop services and otherwise build up and establish facilities for permanent living on the plantation to serve the needs of the required number of plantation employees and their families. The Plantation did this over a period of years and established a perquisite system under which employees of the Plantation received hous-

ing, housing maintenance, water, firewood and kerosene fuel, electricity, medical care, recreational facilities and various maintenance services, including garbage disposal and street cleaning, as a part of their regular compensation. The principal plantation community was established around the plantation buildings and [194] yard area as shown on Exhibit "A" and came to be known as the village of Waialua.

After the plantation was established and continued to operate, there gradually grew up an independent community which is now known as the village of Haleiwa, which is located off the edge of the plantation a little more than a mile from the village of Waialua; and in addition, many non-plantation and independently owned and operated stores, shops, restaurants, service establishments and public schools and churches made their appearance on the plantation itself in and around the village of Waialua to serve the needs of plantation employees and their families living in the area.

By the collective bargaining agreement dated November 19, 1946, between the Plantation and the International Longshoremen's & Warehousemen's Union, Local No. 145-7, which is attached hereto as Exhibit "B," acting for most of the non-supervisory employees of the Plantation, the perquisite system was abolished for all such employees, the value of the perquisites previously allowed to employees being converted into cash wages by the employer and the employee in turn paying cash for

all facilities and services being furnished him by the Plantation. The schedule of rent being paid the Plantation for the occupancy of houses was worked out by collective bargaining with the union and is a part of the bargaining agreement. No employee covered by the existing collective bargaining agreement, including each and every employee defendant herein, is required as a condition of employment to live on the plantation or in Plantation houses or to use any service or facility which the Plantation may be in a position to render its employees. The relationship [195] which exists between the Plantation and its employees who live in plantation houses is that of landlord and tenant. Employees of the Plantation as heretofore are continuing to render services and perform maintenance work on plantation houses and village areas.

At the present time the Plantation owns 820 houses, all of which are located on the plantation. Most of them surround the plantation buildings and yard area and together with the business establishments of the community constitute the village of Waialua. Approximately 335 houses, however, are scattered over the plantation, some of this latter number being clustered and forming field villages. The houses are of frame construction, each house having a yard in front and yard area in the rear which is used for chickens, vegetable gardens or such other purposes as the employees may desire. The lot area for each house may vary from 3,000 square feet to 4,500 square feet or more. The houses face on roads or streets.

On the basis of a census which was completed June 30, 1946, the 820 houses on the plantation were occupied by 3,373 persons, 2,952 of whom were employees and pensioners of the Plantation and their families. The remaining 421 persons living on the plantation and in its houses were lessees and their families who were not employed by the Plantation and who either worked off the plantation or who owned, operated or were employed by independently controlled businesses within it. As of June 30, 1946, there were also 16 employees working on the plantation who lived off the plantation and in houses not supplied or owned by it.

Waialua village has all the physical and visual [196] characteristics of an established community and is similar to a typical small villae or town of a farming community center. The area is criss-crossed with government roads and also roads constructed and maintained by the Plantation. This plantation community offers the usual services and typical commercial establishments to be found in any small town or village. It has ten (10) general stores, two (2) restaurants, two (2) fish markets, one (1) candy store, one (1) hardware store, one (1) clothing store, four (4) barber shops, one (1) beauty shop, one (1) photographic studio, two (2) automotive service stations, two (2) motion picture theatres, one (1) bank and other service establishments, all of which are non-Plantation owned and independently operated; a retail store with two (2) branches, an automotive service station and a hos-

pital owned and operated by the Plantation for both plantation employees and their families and non-plantation persons; and one (1) post office, one (1) public library, five (5) churches, one (1) intermediate and one (1) high school and one (1) day-care center operated as a part of the Territorial School System. There is also existing in this general area of the plantation two (2) gymnasiums, one (1) club house, one (1) swimming pool, two (2) tennis courts, one (1) athletic field and one (1) beach house, all of which were constructed by the Plantation and are available to an Athletic Association, the membership of which is composed of both plantation employees and other persons in the general community, which operates these facilities through dues collections.

The village of Haleiwa is a small business and residential community which is made up of privately owned residences and typical small retail and service establishments. Haleiwa caters to plantation employees and to surrounding [197] community residents, who include persons working at other locations on the Island of Oahu and residents of numerous beach houses and Army and Navy personnel using beach recreational facilities. To some extent the village of Haleiwa has become integrated with the village of Waialua with common fire protection equipment and public police patrol officers serving both communities.

Attached hereto and made a part hereof is Exhibit "I," a map showing the location of Waialua



village, field villages of the plantation, Haleiwa village and in dependently owned houses, stores, and commercial establishments situated in and about Waialua village, together with the plantation roads and public roads of the area.

## 37.

## Description of Present Activities and Operations

In those instances in this stipulation where certain activities and operations of the Plantation have been described by facts and figures covering a period of time not later than the year 1945, it is to be assumed that such facts and figures represent a substantially true and accurate description of such activities and operations at the present time unless the context otherwise indicates.

## Part II

DESCRIPTION OF THE WORK AND  
DUTIES OF CERTAIN EMPLOYEES

## 38.

Each of the persons whose names are hereinafter set forth is now, and for a period of at least one year prior hereto has been, an employee of the Waialua Agricultural [198] Company, Ltd., and as such employee has been performing the work and duties set forth and described immediately following his or her name and in the manner and at the places and times shown; the work and duties of each such person have been and are now being performed in connection with and as a part of the

plantation operations described in full in Part I of this stipulation; and the work and duties of each such person are to be considered as further described by Part I of this stipulation to the extent that Part I is related and applicable to the particular work and duties described for such person in Part II.

## 39.

## CIRACO MANEJA

Ratooning Tractor—Operates a 30 H.P. caterpillar tractor with line shaper attachments to prepare ratoon cane field. He makes minor repairs in the field to the machine which he operates and assists in making major repairs to such machine in the tractor repair shop. During the off season and at other times throughout the year, he cuts firewood for use as fuel by plantation employees living in the plantation villages and hauls stones from plantation fields on stone boat sled in order to clear the fields and assists in tractor repair shop as mechanic's helper in repairing tractors.

All of his work is performed on the plantation.

He works under the general supervision of the Field Superintendent.

## 40.

## TAKEO MIYAZAKI

Plowing—In some work weeks he is engaged exclusively in plowing the fields with a 113 H.P. diesel caterpillar [199] tractor preparatory to planting. In other work weeks he is engaged ex-

clusively in driving a tractor of the same type for other field operations. Occasionally he will also do the following work: operate push rake as relief driver, weed cane fields, haul stones off cane fields with stone boat sled in order to clear the fields, cut firewood for use as fuel by plantation employees living in the plantation villages, and assist in tractor repair shop as mechanic's helper in repairing tractors. His work is the same during the off season.

All of his work is performed on the plantation.

He works under the general supervision of the Field Superintendent.

#### 41.

#### CERILO LENDIO

Planting—Operates a 65 H.P. diesel caterpillar tractor making furrows for planting of cane seed. Makes minor repairs in field on machine which he operates. Assists mechanic in tractor repair shop in making minor repairs on such machine. During the off season and at other times, he assists mechanic in tractor repair shop, cuts firewood for use as fuel by plantation employees living in the plantation villages and operates trench digger machine for pipelines in fields, drainage ditches in fields and ditches for domestic pipelines.

All of his work is performed on the plantation.

He works under the general supervision of the Field Superintendent.

## 42.

## ANTONE VIERRA

Truck Driver—Hauls field labor almost every day [200] in the early mornings and after work. In some work weeks he is engaged exclusively in hauling fertilizer and other agricultural supplies from plantation warehouses and yard area to plantation fields. In other work weeks he is engaged in general trucking operations for the plantation, such as hauling field labor over the plantation to and from their places of work in the fields, hauling incoming store freight from railroad box cars to the Plantation's retail store and hauling cane tops from fields to plantation stables to feed mules and horses. On rare and infrequent occasions he may also haul mill and other plantation supplies from Honolulu to the plantation. Upon occasion he will also work as a helper in the garage. His work is the same during the off season.

All of his work is performed on the plantation except when he is making trips to and from Honolulu, as indicated before.

He works under the general supervision of the Field Superintendent.

## 43.

## AUGUSTINE LORENZO

Water Supply Ditchman—He transmits, as received from his supervisor, orders for the amount of irrigation water to be delivered to the plantation

from upper reservoir for each work period. He is responsible for arranging diversion gates in the main plantation supply canal so as to distribute the water in proper proportion to the various delivery ditches on the plantation. He checks water measurement status to insure delivery of the proper amount of water into system. He is responsible for the proper maintenance of the irrigation canal system under his charge and for reporting immediately [201] any major breaks or maintenance requirements to the proper plantation authorities. He patrols the ditch lines under his custody to insure proper delivery of water throughout the work day. During the non-irrigation periods, he cleans ditches and tunnels.

All of his work is performed on the plantation.

He works under the general supervision of the Field Superintendent.

#### 44

#### Karu Kibota

Steam Pump Operator—Operates steam generating and reciprocating pump equipment to supply water, approximately 97.0% of which is for irrigation of plantation cane fields and approximately 3.0% of which is for domestic use at a plantation field village. Such pump and equipment are a self-contained unit and separate installation located on plantation two (2) miles from the plantation buildings and yard area. See Exhibits "A" and "C". He performs all of his work in the steam generating



pump house. When pump is not being operated, he makes repairs to equipment. He works under the general supervision of the Cane Processing Superintendent.

## 45

## Tadao Watanabe

Rake Operator—He operates bulldozer rake for making fire breaks preparatory to the burning of cane and for opening track lines for the laying of portable tracks. Operates same equipment for fighting emergency cane fires. He bulldozes cane from under telephone and power lines and out-of-way corners which cannot be easily reached by the regular caneloading [202] machine. This cane is bulldozed into piles so that it is available to regular caneloading machine. If he has any minor breakdowns in equipment, he helps mechanic and welder repair them in the field. He also assists on any major repairs to equipment which are made at garage or tractor repair shop. During rainy weather and short shutdown periods, he helps haul cane over portable tracks with same equipment or acts as a common brakeman on the cane cars which are being moved over the portable tracks to the main lines of the railroad.

During the off season he acts as a tractor mechanic's helper in overhauling the tractor which he operates and tractors operated by others. Occasionally during the off season he may work on odd jobs in the mill or cut fire wood for use as fuel by plan-

tation employees living in the plantation villages. All of his work is performed on the plantation.

He works under the general supervision of the Field Superintendent.

## 46

## KOICHI OKOUCHI

Portable Track Plow—Operates portable track plow which is used for the leveling of track lines in the making of beds for portable track.

Occasionally he will help mechanics and welders in repairing tractors. He also carries portable rail for building spurs into cane fields and helps repair such rail.

During the off season he helps tractor repair shop mechanic repair the equipment which he operates. He may also during this period aid in repairing portable tracks in yard adjoining plantation buildings where permanent repair work [203] to portable rails is done. Towards the end of the off season after the above repair work is completed, he may be used in a variety of odd jobs—such as erecting scaffolding in the mill, cutting fire wood for use as fuel by plantation employees living in the plantation villages, weeding and repairing irrigation ditches and unloading of baled empty jute bags used for bagging raw sugar.

All of his work is performed on the plantation.

He works under the general supervision of the Field Superintendent.

## DOMINGO MENOR

Portable Track Lifting Machine—He operates tractor with boom in the laying of portable track and in the reloading of portable track in cane fields of plantation. He works with crew. When weather is too wet to continue operations, he repairs machine and portable track.

During the off season, he assists the principal mechanics in tractor repair shop in repairing machine which he operates. During this period he also helps in permanent repairs of portable track in yard adjacent to plantation buildings and yard area. At the conclusion of such repair work in off season, he performs odd jobs including such as erecting scaffolding in the mill, cutting fire wood for use as fuel by plantation employees living in the plantation villages, weeding and repairing irrigation ditches, unloading of baled empty jute bags used for bagging raw sugar, and on rare occasions loading bagged sugar into box car from warehouse.

All of his work is performed on the plantation.

He works under the general supervision of the Field Superintendent. [204]

## TSURUO HAYASHI

Caneloading Machine—He operates caneloading machine in fields of plantation. He makes minor repairs to machine in case of breakdown or aids regular mechanic and welder in doing so. On major

breakdowns he aids in transporting machine from field to caneloading machine repair shop in plantation buildings and yard area in making necessary repairs.

During off season, he aids in overhauling caneloading machine. After this is completed he does odd jobs such as operating shovel machine to clean reservoirs and various irrigation and drainage ditches of the plantation. During the off season, he may also be used in construction jobs or he may help with any mechanical or construction repair work around mill or in tractor repair shop.

All of his work is performed on the plantation.

He works under the general supervision of the Field Superintendent.

## 49

## CORNELIO ASUNCION

Haul Cane Tractor Operator—He operates haul cane tractor. Hauls empty cane cars into field and full cars out of field. Repairs minor breakdowns on machine or helps mechanic on any major breakdowns. During wet weather when harvesting stops, he may assist in weeding or cultivating or help clear storm ditches or assist in the removal of irrigation flume preparatory to plowing.

In the off season he helps repair cane cars and flat cars—changing parts and doing general carpentry work on wooden portions of rail cars. Such repair work is done [205] in the plantation yard. During such period he may also help in repairing

portable rails. During the latter part of the off season, he performs many odd jobs and in some work weeks is engaged exclusively in cutting fire wood for use as fuel by plantation employees living in the plantation villages, repairing houses and pruning shade trees, etc.

All of his work is performed on the plantation.

He works under the general supervision of the Field Superintendent.

## 50

### ROQUE CRISOSTOMO

Grader Driver—In some work weeks he is engaged exclusively in driving and operating a motor driven grader for the purpose of leveling and shaping field and village roads of the Plantation and installing water drainage to preserve such roads. In other work weeks he is engaged exclusively in operating grader to build irrigation banks to prevent the run-off of irrigation water, to level off high spots and fill in old ditches in fields preparatory to planting. In others work weeks he may spend a day or two grading around the plantation buildings and yard area or plantation housing areas preparatory to the construction of a new building or house. He may upon occasion in rainy weather work as helper in garage or tractor repair shop repairing trucks or tractors, or help load or unload trucks which carry field, mill or shop supplies.

All of his work is performed on the plantation.

He works under the general supervision of the Field Superintendent. [206]



## PETER HOLMBERG

Locomotive Driver—In some work weeks he is engaged exclusively in operating a locomotive with crew hauling loaded rail cane cars from plantation cane field switches to the mill yard and returning empty cane cars to the plantation cane fields. In some work weeks he is engaged exclusively in spotting loaded cane cars in the mill yard for unloading into cane carrier and in removing empty cane cars from the mill yards to nearby spurs.

In other work weeks he is engaged exclusively in hauling rail cars loaded with plantation freight from the O. R. & L. spur to plantation yard and warehouses, and in removing rail cars loaded with sugar and molasses from the sugar and molasses loading stations of the Plantation to O. R. & L. siding; also in such work weeks he picks up empty molasses and sugar cars and spots them on the molasses and sugar loading spurs of the Plantation.

In other work weeks he operates a locomotive for each of the purposes enumerated above.

During the off season he assists in making repairs to plantation locomotives. Part of such repair work is done at the plantation round-house and part is done in space adjacent to the plantation machine shop. See Exhibit "F".

All of his work is performed on the plantation except when and to the extent that he pushes loaded

sugar and molasses cars—from the plantation lines onto the O. R. & L. siding.

He works under the general supervision of the Cane Processing Superintendent. [207]

## 52

## HATSUSUKE SERA

Section Hand on Permanent Tracks—He repairs permanent tracks and maintains plantation railroad rights-of-ways. He installs field switches for connecting main lines of Plantation to field portable track lines. He cleans rights-of-ways. In off season he repairs permanent tracks and cleans rights-of-ways.

All of his work is performed on the plantation.

He works under the general supervision of the Cane Processing Superintendent.

## 53

## TAKUMI OKOUCHI

Flagman at Road Crossing—He flags highway crossings on plantation railroad to protect motorists. During the off season he cleans and weeds the plantation railroad rights-of-way. In wet weather when cane is not being hauled, he may also weed plantation railroad rights-of-way. All of his work is performed on the plantation.

He works under the general supervision of the Cane Processing Superintendent.

## 54

## PEDRO DUMLAO

—Cane Carrier—He works at cane carrier one day where he uncouples loaded cane cars preparatory to unloading. Collects cane car tickets showing type of cane and time and field at which harvested. Cleans up around unloading station. The following day he couples up empty cars, cleans empty cars, cleans up around unloading switch. The next day he acts as a watchman on the wash carrier to keep it from being jammed. The following day he removes stones and foreign material from [208] the cane carrier and maintains the cane carrier full of cane. During the off season he helps to clean up around the cane carrier and helps with repairs on cane carrier and cane cleaning plant. He may also during the off season assist in repairs in crushing plant.

All of his work is performed on the Plantation.

He works under the general supervision of the Cane Processing Superintendent.

## 55

## BERNABE HERNANDEZ

Scales and Cane Cleaning Plant—He works in cane cleaning plant for one-half of his working day where he weighs incoming cane cars, notes the gross weight on the cane car ticket and cleans any adhering cane from car which has been dumped. The other half of his work day he operates machinery in the cane cleaning plant. He operates machinery at cane cleaning plant for moving incoming loaded

cane cars into cleaning plant, the cane car dumper, the empty car transfer and the machinery for moving out empty cars. During the off season he helps repair the conveyors at the cane cleaning plant and also helps repair machinery in the crushing plant.

All of his work is performed on the Plantation.

He works under the general supervision of the Cane Processing Superintendent.

## 56

## DOMINGO GUIGUI

Truck Driver—He is engaged exclusively during the grinding season in trucking away from the mill rock and [209] dirt removed from the cane cleaning plant. He deposits such rock and dirt in the fields to fill up holes, gulches and ditches. Such trucking operations are required to be conducted 24 hours a day for the entire harvesting period. During the off season he is engaged in general trucking operations for the Plantation.

All of his work is performed on the plantation except that from time to time he may haul plantation supplies from Honolulu to the Plantation. Some of these supplies are shipped to Honolulu from the continental United States.

He works under the general supervision of the Field Superintendent.

## 57

## USHINOSUKE KONDO

Crushing Plant—He works in crushing plant maintaining flow of cane through the crushing

mills by regulating the speed of the driving engines. He also regulates the intake or flow of water used to wash out the last removable sugar in the cane fiber. This water is added to the cane blanket before it passes through the last crushing mill. In the off season he repairs crushing plant equipment.

All of his work is performed on the plantation.

He works under the general supervision of the Cane Processing Superintendent.

## 58

## TERUICHI KUBO

Boiling House—He boils low grade massecuites (returned molasses and small sugar crystal seed from high grade process) until crystallization has taken place and proper grain size obtained. He also checks on the boiling of the high grade massecuites or mother liquor. On week-ends [210] he makes minor repairs and cleans pan tubes if necessary. During the off season he makes repairs to boiling house equipment.

All of his work is performed on the plantation.

He works under the general supervision of the Cane Processing Superintendent.

## 59

## MASAIKI OATO

Evaporators—He boils sugar juices in series of evaporators to proper concentration. He also tends lime mixing station and clarification station. He makes minor repairs and cleans evaporators over



the week-ends and during off season he repairs boiling house equipment.

All of his work is performed on the plantation.

He works under the general supervision of the Cane Processing Superintendent.

60

### SIMON CUMLAT

High Grade Centrifugals—He purges high grade massecuites in centrifugals and discharges the purged sugar. On the week-ends he cleans evaporator tubes. In the off season he helps clean and repair boiling house equipment.

All of his work is performed on the plantation.

He works under the general supervision of the Cane Processing Superintendent.

61

### APOLONIO LAZO

Low Grade Centrifugals—He purges low grade massecuites in centrifugals and discharges purged low grade [211] sugar from centrifugal baskets. On week-ends he cleans evaporator tubes. During the off season he helps clean and repair boiling house equipment.

All of his work is performed on the plantation.

He works under the general supervision of the Cane Processing Superintendent.

62

### GIICHI HAMAMOTO

Sugar Bagging and Loading of Sugar—He operates a sugar bagging machine on sugar flowing from

centrifugals. (Sugar passes from high grade centrifugals into dryer and thence to temporary storage bin and thereafter through automatic scales to bagging machine.) The other half of his day he stacks bagged sugar in rail cars, as it is delivered from mechanical carrier, for shipments to port. In emergencies when shipping facilities are unavailable, he may assist in stacking bagged sugar in sugar warehouse for temporary storage and later removing same to rail cars. In off season he paints interior of mill buildings and the boiling house equipment; he helps on repairs to boiling house equipment; and he installs rigging for lifting boiling house equipment and lifts with chain tackles or mechanical devices.

All of his work is performed on the plantation.

He works under the general supervision of the Cane Processing Superintendent.

### 63

#### DIONICIO CARRIT

Fire Room—He works in fire room regulating flow of bagasse to furnaces, regulating furnace draft, all to [212] maintain proper steam pressure in fire room for the operation of mill machinery, power plant machinery and boiling house equipment. At times of mill stoppages he feeds back by hand excess bagasse to the furnaces. During the off season he cleans boilers, drums and tubes and helps to lay furnace bricks for reconditioning of fire room.

All of his work is performed on the plantation.

He works under general supervision of Cane Processing Superintendent.

## 64

## SERAPHINE ROBELLO

Power Plant—He operates power plant electric generating and switching equipment and air compressors. He also makes minor repairs to this equipment. During the off season he makes repairs to power plant generating equipment. (Generating equipment completely closed during the off season and all power purchased from Hawaiian Electric.)

All of his work is performed on the plantation in connection with the generation of electric power for the overall operations of the Plantation as heretofore described in the stipulation of the general facts.

He works under the general supervision of the Cane Processing Superintendent.

## 65

## TOSHIO TANAKA

Machine Shop—During the grinding season he machines parts for both mill and field equipment during same work weeks. During off season his work is largely confined to machine operations on mill equipment, but also from time to [213] time during such period it is necessary that he perform machine work on field equipment. When a metal part in cane processing machinery breaks during grinding season and cannot be welded, he is called in to take measurements for purposes of repairing or making new part as quickly as possible as the

mill is generally required to close down until the repairs are completed, which, if continued for any appreciable time, may result in a considerable financial loss as is hereinbefore described in the stipulation of the general facts. He may also upon occasion assist in installation or reassembly of part in machinery. Upon occasion he will go to canelodging machine repair shop or tractor repair shop or garage to take measurements for repairing or reproducing broken parts. He also machines axles for cane cars during the entire year and machines parts for the locomotives, steam pumps and electric pumps.

All of his machine works, however, is done in machine shop of the Plantation which is located adjacent to the mill.

He works under the general supervision of the Cane Processing Superintendent.

## 66

### BARNEY FARIA

Locomotive Repair—He makes minor and major repairs on all plantation locomotives. Minor repairs are made at the round house located in the plantation buildings and yard area (see Exhibit “F”), and occasionally some places on the main line of the plantation railroad. Major repairs for the most part are made in the welding shop. His work is the same during the off season. During the off season he is assisted [214] by several of the locomotive drivers.

All of his work is performed on the plantation.

He works under the general supervision of the Cane Processing Superintendent.

## 67

## FUMIO SUNAHARA

Welding Shop—He is engaged in welding operations, making repairs on mill machinery, irrigation pipe lines, cane cars, locomotives, steam pump equipment and electric driven pumping equipment. The water pumped by such equipment is used for cane field irrigation, by the mill for cane processing, for condensing exhaust steam from power generating units, for domestic use and to supply water to gardens of plantation employees and to a few small farms all of whose produce is consumed locally. When mill equipment requires welding repair during processing operations, he is called to make such repairs as quickly as possible as the mill is generally required to close down until the repairs are completed, which, if continued for any appreciable time, may result in a considerable financial loss as is hereinbefore described in the stipulation of the general facts. In performing his work, he welds either in the welding shop located adjacent to the mill, or in the mill during grinding operations or at outside points where equipment is being repaired. Occasionally he assists in the repair of field equipment, tractors, trucks and harvesting machinery. Such repair work may be done in the field. Welding of fabricated steel pipes for irrigation system is done in the welding shop and assembly welding of the pipes is done in the field. He per-



forms the same work during the off season except that [215] the majority of work is performed in the mill.

All of his work is performed on the plantation.

He works under the general supervision of the Cane Processing Superintendent.

## 68

## HIROSAKU TAKATA

Blacksmith Shop—He works as a smith. He repairs field implements and makes parts for field equipment. Does small amount of horseshoeing. Two days of each work week during grinding operations he makes repairs for the mill. He also makes repairs to cane cars and frames of trucks used throughout plantation operations. During the off season his work is the same.

All of his work is performed on the plantation.

He works under the general supervision of the Cane Processing Superintendent.

## 69

## KIICHI YAMADA

Tinsmith Shop—In most work weeks he is exclusively engaged in making irrigation gates from thin-gauge galvanized metal, in making repairs to auto and truck radiators, which autos and trucks are used throughout the plantation operations, in making small cans for spraying of herbicides in fields and along roads and irrigation ditches and in maintaining them in repair and in repairing knapsack sprayers used in field spraying. In some work

weeks, however, in addition to the above, he makes repairs to mill equipment and on rare and infrequent occasions makes up and installs gutters on mill and shop buildings. Irrigation gates are made and radiators repaired in tin shop located in plantation buildings and yard [216] area as shown on Exhibit "F"; other work is performed outside at place of construction or repair, but all of his work is performed on the plantation.

He works under the general supervision of the Cane Processing Superintendent.

## 70

## ALFRED REYHER

Caneloading Machine Repair Shop—In most work weeks he is engaged exclusively in making repairs to field caneloaders and to field equipment, grabbers, subsoilers and ratooning equipment. In some work weeks, however, and on emergency occasions during the grinding season when there is insufficient manpower available from the machine and welding shops, he spends part of his time assisting in making repairs in the mill. He does more major overhauling on cranes during the off season. The major portion of his work is done in the field during the grinding season and almost exclusively in the shop during the off season.

All of his work is performed on the plantation.

He works under the general supervision of the Cane Processing Superintendent.

## 71

## MASARU EZAWA

Tractor Repair Shop—In most work weeks he is engaged enclusively in making repairs to tractor and field implements. Major overhauls are carried out within the tractor repair shop, but repairs which do not require complete dismantling of equipment and which can be conveniently made there are done in the field. In some work weeks, however, and on emergency occasions during the grinding season when [217] there is insufficient manpower available from the machine and welding shops, he works in the mill to assist in making repairs. During the off season he spends all of his time overhauling tractors and field implements which are brought in from the field and completely overhauled.

All of his work is performed on the plantation.

He works under the general supervision of the Cane Processing Superintendent.

## 72

## DAMASO CLAUNAN

Garage—He works exclusively in repairing and maintaining automobiles and trucks used throughout the plantation operations. His work is the same during the off season.

All of his work is performed on the plantation.

He works under the general supervision of the Cane Processing Superintendent.

## 73

## ANTONE ROBELLO

Servicing—Delivers gasoline, fuel oil, lubricants and water to plantation field equipment and assists in servicing such equipment. He works out of plantation garage. His work is same during the off season.

In going to and from fields he travels over plantation field roads and public highways which run through some plantation areas.

He works under the general supervision of the Cane Processing Superintendent. [218]

## 74

## MANUEL DAMAS

Service Station—He dispenses gasoline, diesel oil and lubricants for all plantation cars and trucks and fuel oil for plantation bath houses at plantation service station. He also dispenses fuel oil and gasoline to service trucks which in turn supply plantation tractors and caneloaders. He handles no grease jobs or other such work. His work is same during the off season.

All of his work is performed at the service station which is located in the plantation buildings and yard area.

He works under the general supervision of the Warehouse Superintendent.

## KEICHI KAMIYAMA

Electrician—He is engaged in electrical service and repair work. The building in which or from which he works is known as the electric shop and is situated in the plantation buildings and yard area as shown on Exhibit “F”.

In some work weeks he is engaged exclusively in repairing and servicing electrical equipment situated and used in the plantation sugar mill in connection with the processing of cane into sugar. In other work weeks he is engaged exclusively in repairing and servicing power lines which carry power from the plantation's power house and substation to its electrical irrigation pumps, and also in repairing and servicing such pumps. In some work weeks he is engaged exclusively in repairing and servicing electrical motors used to repair tractors in the tractor repair shop. [219] In still other work weeks he is engaged exclusively in repairing and servicing power transmission lines of the Plantation which furnish light and power to plantation buildings, motors and dwellings and some non-plantation buildings and dwellings. He also installs household electrical equipment. In still other work weeks he does each of the things which are enumerated above in the same work week.

His duties during both the grinding and off seasons are the same.

All of his work is performed on the plantation.

He works under the general supervision of the Cane Processing Superintendent.



## 76

## YOSHIJI YAMADA

Carpenter Shop—Works as carpenter in repairing plantation railroad bridges, flumes, constructing and repairing plantation houses, repairing all plantation buildings and performing miscellaneous carpenter shop jobs and mill carpentry. Also does construction and repair work on steel and concrete pipelines and siphons used in connection with irrigation and water supply systems. He may go into mill at any time to construct scaffolding necessary to do emergency repair work. His work is the same in the off season.

All of his work is performed on the plantation.

He is under the general supervision of the Construction Superintendent.

## 77

## EDWIN MORI

Carpenter Shop—Engaged in performing carpentry and related repair work on railroad cars. Upon occasion he may [220] assist in keeping office records in connection with the repair and maintenance of such railroad cars. His work is the same during the off season.

All of his work is performed on the plantation.

He works under the general supervision of the Construction Superintendent.

## GENJIRO HIRONAKA

Carpenter Shop—Works exclusively in the carpenter shop. Most of his work is performed in connection with the care and maintenance of shop tools, machinery and equipment. He also repairs plantation equipment, makes scrapers used for cleaning of centrifugals, conveyor slats used in mill conveyors, and push poles for unloading cane cars, and repairs wood on all station wagons and trucks. His work is the same during the off season.

All of his work is performed on the plantation.

He works under the general supervision of the Construction Superintendent.

## JIRO SAKAI

Paint Shop—Works as a painter exclusively. In most work weeks he is engaged exclusively in painting plantation houses. In some work weeks, however, he works exclusively in connection with the painting of office buildings, plantation gymnasium and club house and other plantation buildings exclusive of the mill. His work is the same during the off season.

All of his work is performed on the plantation.

He works under the general supervision of the Construction Superintendent. [221]

## MARGARET FUJIWARA

Laboratory—She makes daily analyses of sugar juice and syrups; determines hydrogen ion, density, and salt concentrates of mill boiler water, steam pump boiler water and locomotive boiler water for purposes of maintaining proper mill, pump and boiler water purities while cane is being processed or steam pumps operated. She also types reports and does laboratory office clerical work. Assists in making nitrogen and moisture analysis of cane leaf blades and analysis of total sugars in cane leaf sheaths. During the off season she does clerical work for the general supplies warehouse which handles storage of much of the plantation supplies and materials, including supplies and materials for mill, shops, field, plantation houses and administrative offices. She also recharges fire extinguishers as required during the grinding season.

All of her work is performed in the laboratory or general supplies warehouse, (except to obtain boiler water samples in fire room each day), both of which are located in plantation buildings and yard area as shown on Exhibit "F".

She works under the general supervision of the Cane Processing Superintendent except during the off season when she is under the Warehouse Superintendent.

## 81

## LOUIS PACHECO

Cane Leaf Sampling—He collects daily samples of cane leaves from various fields on the plantation and prepares them for foliar chemical analysis in the plantation laboratory for the purpose of determining the plant food requirements [222] and plant food status of each field of sugar cane on the plantation. After preparing the samples for analysis by an assigned technician, he returns to the main administrative office where he is engaged in clerical work pertaining to the assembly of laboratory information and its correlation with other growth factors and data which will permit the maintenance of a graphic log of all factors of weather, irrigation and fertilization which might affect the growth and production of sugar cane. He does some of the simple laboratory work. His work is the same during the off season.

All of his work is performed on the plantation.

He works under the general supervision of the Field Superintendent.

## 82.

## YUKISHIGE TSUTSUI

Concrete Products—Works in concrete products plant located on plantation near plantation buildings and yard area, where he assembles forms, pours concrete, drives a finger-lift in connection with the making of concrete flumes, pipes, house foundation blocks, flume footings, sidewalk blocks

and other concrete products which are used by Plantation in its fields or villages. His work is the same in the off season.

All of his work is performed on the plantation.

He works under the general supervision of the Construction Superintendent.

## 83.

## YACK CHUN LEE

General Supplies Warehouse and Heavy Supplies Warehouse—He is employed in general supplies warehouse situated [223] about 100 feet from the mill. He checks and keeps records on incoming materials and supplies. He keeps records on warehouse inventory. Occasionally checks out merchandise to mill, field and shops. Prepares some order lists for new materials and supplies. Upon occasion will also unpack supplies and place same in storage in warehouse which is in a building adjoining the general supplies warehouse. His work is the same the year around.

All of his work is performed on the plantation.

He works under the general supervision of the Warehouse Superintendent.

## 84.

## EIKO SAKAGUCHI

Clerical Help—She keeps all records for all construction work performed on cane cars, houses, mill and other plantation buildings and keeps the time of all men in the Construction Department, keeps



the records of all products made at the concrete products plant, keeps inventory of concrete products on hand, and makes out monthly reports for the Department. She records all work orders and keeps records of all interdepartmental jobs. Does general office work. All her work is done in headquarters office of the Construction Department situated in carpenter shop located in the plantation buildings and yard area. Her duties are the same during the off season.

All her work is performed on the plantation.

She works under the general supervision of the Construction Superintendent. [224]

85.

#### MOSES FERNANDEZ

Village Cleaner—In most work weeks he is engaged exclusively in sweeping up leaves, rubbish and trash in plantation villages. In other work weeks, in addition to the above, he may work in the fields keeping main ditches free from weeds. His work is the same during the off season.

All of his work is performed on the plantation.

He works under the general supervision of the Field Superintendent.

86.

#### TOSHIO KASHIWABARA

Sewer and Water—Constructs and repairs all plumbing installations of the plantation—including plumbing for domestic sewer and domestic water

supply systems, houses, mill, and other plantation buildings having toilets and wash room facilities. In many work weeks he is engaged exclusively in constructing and repairing plumbing for plantation houses and for the water and sewerage systems servicing such houses. His work is the same during the off season.

All of his work is performed on the plantation.

He works under the general supervision of the Construction Superintendent.

### Part III

#### SCOPE OF CONTROVERSY AND DISPUTE

It Is Hereby Further Stipulated by and between the parties hereto as follows: [225]

The controversy involved in the suit pursuant to which this stipulation is made and filed raises the question of whether the employees of the Plantation named as parties defendant herein and all other employees of the Plantation who are similarly situated are entitled to overtime compensation pursuant to the provisions of Section 7(a) of the Fair Labor Standards Act of 1938.

No controversy exists with respect to the application of the minimum wage provisions of the Fair Labor Standards Act of 1938 to the defendant employees herein or any other employees of the Plantation similarly situated as the lowest paid employee of the Plantation is paid at an hourly rate in excess of that required by the Fair Labor Standards Act of 1938.

The parties are agreed that any employee named herein as defendant who is held not to be subject to the Fair Labor Standards Act of 1938 or who is held to be exempt therefrom, and any other employee of the Plantation similarly situated, is subject to the maximum hour provisions of the Hawaii Wage and Hour Law and must be paid at a rate of not less than one and one-half ( $1\frac{1}{2}$ ) times the regular rate at which he is employed for all hours in excess of forty-eight (48) hours per week.

/s/ RICHARD GLADSTEIN,  
Attorney for Defendants.

/s/ RUFUS G. POOLE,  
Attorney for Plaintiff,

/s/ E. C. MOORE,  
Attorney for Plaintiff. [226]

[Exhibits A, B, C, D, E, F, G, H, and I referred to in the Stipulation are identical with similarly lettered exhibits attached to the Complaint, which exhibits are reproduced hereinbefore as part of the Complaint but are not reproduced as part of said Stipulation.]

[Endorsed]: Filed Sept. 12, 1947.